CUMBERLAND COUNTY COUNCIL.

ANNUAL REPORT

(SURVEY)

OF THE

MEDICAL OFFICER OF HEALTH,

F. H. MORISON, M.D., D.P.H.

FOR THE YEAR 1925.

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CUMBERLAND COUNTY COUNCIL.

To the Cumberland County Council.

MR. CHAIRMAN, LADIES AND GENTLEMEN,

I have pleasure in presenting this my Eighteenth Annual Report, viz., that for the year 1925, on the Health of the Administrative County.

I have endeavoured to make this Report not only a record of the public health activities during the last five years (as was intimated in paragraph 13 of Circular 540 of the 18th December, 1924, that it should be), but also a record of the sanitary condition of each sanitary district as well as of the County as a whole, up to the end of 1925.

The subjects dealt with fall under the following main headings:—

1. Natural and Social Conditions of the Area.
2. General Provisions of Health Services in the Area.
3. Sanitary Circumstances of the Area.
4. Housing.
5. Inspection and Supervision of Food.
6. Prevalence of, and Control over, Infectious Diseases.
7. Maternity and Child Welfare.

Health is of infinitely greater importance than wealth, but unfortunately the truth of this is seldom properly appreciated till illness proves it, when no trouble seems to be too great or no available money ill-spent in the endeavour—often a failure—to recover it. This knowledge has given rise to the almost stale but invaluable saying that "Prevention is better than cure."

More and more this idea of prevention of disease is occupying the attention of doctors, but it cannot be accomplished without the interest and support of the public—individual members of which are apt to describe efforts to protect their health as "fads." Some of us remember how the attempt to stamp out Hydrophobia, one of the most fatal and deadly diseases, out of this country was opposed. A far-seeing statesman introduced a law for the muzzling of dogs for one year, and no dog was to be admitted to these islands before being detained in quarantine under strict supervision till it was known to be safe from spreading infection. Hydrophobia is now unknown here.

It is a rule, with few exceptions, that the cause of disease has to be discovered before effective measures can be taken for its prevention. The most striking example of this has been seen in the Panama Canal zone. That country, which was once a death trap, has been converted into a health resort by the discovery that the fever which killed its inhabitants off was propagated by a mosquito, and measures were invented for its destruction, which have successfully accomplished this and saved thousands of lives every year.

In this country such dramatic displays of the value of knowledge cannot be offered, but when it is realised that during the last fifty years the expectation of life has been prolonged by 12 years, that some of the most deadly diseases of half a century ago such as Typhus and Typhoid Fever have now become so rare as to be curiosities, and that many other diseases are diminishing in quantity and severity, there are good reasons for optimism, but no reason for satisfaction, because all of us know how much more could be done about prevention if we went about it in the right way.

Surgery has taught us invaluable lessons which are of general application, and which should be better understood and more acted upon. The older surgeons were so uncertain as to the outcome of their operations that only such as were urgently necessary to save life were usually performed. Wound infection and death from blood poisoning might follow the most trivial cut, and too often do still if a wound is neglected, but if germs can be excluded from the wounds they heal without danger or trouble. How are germs excluded from wounds? It is known that they are introduced along with *dirt*, and that if everything concerned with the wound is surgically clean, healing will follow without trouble, because *dirt* is the carrier of disease.

Fortunately the human body has remarkable powers of resisting disease, otherwise none of us could live. Germs which may produce disease surround us everywhere, and resting on and in many parts of our bodies are waiting to attack if our resistance is diminished by any sort of weakness. The less dirt there is the fewer germs there are, and a large dose of them is almost essential to break down the fighting forces of a healthy body.

Clean surroundings, clean water, clean air, clean food are the most important factors in maintaining health. Dirty surroundings, dirty water, dirty air, and dirty food are the great causes of disease.

Recent legislators, recognising this, have attempted to bring in laws conducing to the preservation of health, and based upon this knowledge. Legislators and doctors may do something to help, but all their efforts will fail unless they receive public support, and this will not come in full measure till education and example have brought home their message.

How many human beings are living under conditions which would not be tolerated in the case of pedigree cattle? How much of the drinking water in Cumberland is simply diluted sewage? How many bakers and butchers and vegetable sellers protect the food they sell from gross pollution? How many of even our public buildings are well enough ventilated to be free from poisonous air?

Two of the most common diseases in this County—(1) Tuberculosis and (2) Syphilis—are the result of contagion by germs derived from outside sources. They are both preventible, and if present day medical knowledge could be acted upon would generally be prevented.

A large proportion of the tuberculosis in Cumberland is due to infected milk. Until it is recognised that the sale of tuberculous milk is a criminal act and due punishment prevents the crime, tubercle will continue to flourish.

Milk is the most important, indeed the only good food for children, and no trouble should be too great to ensure that they get it pure. Meantime the only safeguard is to boil all milk not specially guaranteed, and this unfortunately spoils some of its valuable constituents.

Syphilis has diminished somewhat as sex problems, by education of men and women, have become better understood. Early treatment of the disease has diminished its infectivity and lessened its spread. The only real preventatives are improved sexual morality and early isolation and careful supervision of infected persons, so strict that it is made impossible for them to infect others.

I have for years past advocated that every member of the community should undergo medical examination at least once a year for prevention of disease or for its early discovery in time to give treatment the best chance of success. Some of the largest insurance offices have now taken this up as a business proposition, and have found that it pays. Perhaps this may make more impression than my advice has done.

I have the honour to be,
Ladies and Gentlemen,
Yours obediently,
F. H. MORISON,
County Medical Officer of Health.

1.—NATURAL AND SOCIAL CONDITIONS.

Area.

The Area of the Administrative County as given in the Census returns for 1921 is 968,598 acres. The Municipal and Urban Districts (14 in number), 62,133 acres; the Rural Districts (9 in number), 906,465 acres.

Population.

	At the Census. 1921.		Estimated by Registrar-General. 1925.
Urban Districts ...	121,340	...	122,500
Rural Districts	99,123	...	97,530
Administrative County	220,463	...	220,030

Physical Features and General Character.

Cumberland is a maritime County situated in the North-West of England, and is about 85 miles in length from its junction with Northumberland and Scotland to Haverigg Point in the extreme south. Its Western boundary is the Solway Firth and St. George's Channel; its South-Western, the same Channel. Its breadth from the sea coast to the Durham boundary is about 44 miles.

On the North-West it is bounded by Scotland, from which it is separated by the River Liddel; whilst in the South-East the Rivers Eamont and Tees separate it from Westmorland, and the River Duddon from the Furness portion of Lancashire.

On the East it is bounded by Northumberland and Durham, and on the North-East by the former County.

The County is of very irregular formation, and has approximately 60 miles of coast line.

It is ninth in size of the counties of England, but is very sparsely populated, there being only ten counties with less population. I wonder if there is in England a parish similar to Skiddaw Parish in the Cockermouth Rural area, which at the Census of 1921 had only one inhabitant on its 2,967 acres.

The surface of the county along the coast and through the centre from North to South is tolerably level, but the other parts are very mountainous.

The tracts of mountains or fells, as they are called, range from 2,000 to 3,000 feet in height; those in the

South-Western portion being the highest, including Scafell, 3,161 feet; Helvellyn, 3,033 feet; Skiddaw, 3,022 feet; Great Gable, 2,949 feet; Saddleback, 2,847 feet.

The mountains in the East are not so lofty, the principal being Crossfell, 2,901 feet; Skirwith Fell, 2,562 feet; Ousby Fell, 2,949 feet; and Melmerby Fell, 2,331 feet.

Among the Southern fells occur most of the well-known lakes which attract so many visitors during certain seasons of the year.

The principal of the lakes are :—Ullswater, down the middle of which is the dividing line between Cumberland and Westmorland. This lake is about 7½ miles long and about ¾ mile wide. In summer a regular service of steamers plies from one end to the other. Boating and fishing are to be had.

Derwentwater, less than half a mile distant from the town of Keswick, is about three miles in length and rather over a mile in width. Both boating and fishing to be had. The River Derwent and the Watendlath Beck flow simultaneously into the Lake from the famous Lodore Falls.

Bassenthwaite, to the north of Derwentwater, between Keswick and Cockermouth, is about four miles in length and varies in width from about one mile in the north to about a quarter of a mile in the south. Both boating and fishing.

Buttermere, about five miles south-west of Keswick, is about a mile and a half long by half a mile broad.

Crummock Water is a short distance north of Buttermere. Excellent fishing can be had here, and boats can be obtained from hotels in Loweswater and Buttermere.

Loweswater is north-west of Crummock Water.

Ennerdale Lake is near Egremont, in the Ennerdale Valley, and is about 2½ miles long and two-thirds of a mile wide. Excellent fishing can also be had here.

Wastwater Lake is about three and a half miles long and half a mile wide, and excellent fishing can be obtained.

Thirlmere, which supplies Manchester with water.

There are also numerous tarns or small mountain lakes, in which excellent fishing can be had.

In the County are numerous rivers and smaller streams. The River Duddon separates Cumberland from Lancashire, and forms the Duddon Estuary at the extreme south of the County; in the South also are the Esk, Irt, and Mite, which flow into the sea at Ravenglass.

The Esk and Mite rise in Eskdale Moor, and the Irt flows from Wastwater, and receives the Bleng in its course.

The Ehen is also in the South, and flows from Ennerdale Water, and is joined by the Keekle as it enters the sea. The Calder rises in the hills near Ennerdale Lake, and enters the sea at the same point as the Ehen. The Liza is a small river flowing into Ennerdale Lake.

The Derwent rises in the mountains on the Westmorland border, and flows in a northerly direction to Derwentwater, thence to Bassenthwaite Lake, after which it has a westerly course through Cockermouth to the sea at Workington. In its course it receives the waters of the Cocker, the Marron, and the Greta; it is about 33 miles in length.

The Ellen in the north-west flows in a westerly direction from the moors to the sea at Maryport.

The Caldew flows from the south and takes a northerly direction to Carlisle, north of which it flows into the Eden; it receives the Ive south of Carlisle.

The Eden rises in Westmorland, and crosses the county from south-east to north-west, and after flowing through Carlisle enters the Solway Firth. It is about 35 miles long.

The Petteril rises in the south and flows in a northerly direction to Carlisle, near which city it joins the Eden.

The Irthing forms a portion of the Northumberland border, and flows south-westerly to the Eden.

In the North of the County is the River Lyne, formed by two streams the Black Lyne and the White Lyne, which after they join flow into the Esk.

The Esk, the second river of that name in the County, rises in Scotland, and at the point where it enters Cumberland receives the Liddel, and flowing past Longtown enters the Solway Firth.

The Sark flows into the mouth of the Esk.

The Wampool and Waver in the north-west flow into the Solway Firth.

In the Eastern portion of the County the South Tyne rises in the Alston Moors.

The Eamont flows from Ullswater, and forms for about ten miles the southern boundary of the County, and joins the Eden.

The Tees rises near Crossfell, and forms for a short distance in its course to Durham the southern boundary of the county.

There is a wide variation in the geological features. The mountains in the East belong to the carboniferous system embracing millstone grit and carboniferous or mountain limestone; the level tract of land along the valleys of the Eden and Petteril and the shore contain the new red sandstone, and the remainder is occupied by the carboniferous system and also by the silurian rocks, embracing clay, slate, and various slaty limestones, interspersed with granite.

The various formations including many valuable minerals. Among them are barium (compounds), barytes, fireclay, brickclay, iron (hæmatite), coal, gravel and sand, igneous rock, lead, limestone, silver, zinc ore, slate, and gypsum.

Lime is largely worked for the iron works and agricultural purposes.

Gypsum is worked at Hesket. Other minerals are obtained, but in very small quantities.

Of the mines, iron-ore and coal are the most important, and are procured in the East, West, and South of the County; much the greater portion, however, from the West.

Red hæmatite is the main ore.

Number of Inhabited Houses.

At the Census (1921) there were 46,618 structurally separate dwellings occupied.

In these dwellings there were 237,518 rooms occupied, serving a population of 211,440, and composed of 47,837 private families.

In the Census returns, to avoid the ambiguity attaching to the use of such terms as "house," "tenement," etc., a new term, "structurally separate dwelling," was introduced as the housing unit serving as the basis of the returns.

A structurally separate dwelling is defined as "any room or set of rooms having separate access either to a street or to a common landing or staircase accessible to visitors."

RATEABLE VALUE AND SUM REPRESENTED BY A PENNY RATE.

Year.	Annual Rateable Value. General County Purposes.	Annual Rateable Value. Elementary Education Purposes.	Produce of 1d. Rate. General County Purposes.	Produce of 1d. Rate. Elementary Education Purposes.
	£	£	£	£
1921-22	1,678,562	1,491,636	5,953	5,181
1922-23	1,548,396	1,373,579	5,344	4,623
1923-24	1,481,934	1,309,068	*5,066	*4,354
1924-25	1,544,772	1,358,944	*5,307	*4,541
1925-26	1,531,854	1,343,666	*5,252	*4,476

*Inclusive of the grant under the Agricultural Rates, Act, 1923.

I am indebted to Mr. John Durham, the County Accountant, for the above figures.

Social Conditions, including the Chief Occupations of the Inhabitants, and the influence of any particular Occupation on Public Health.

The figures given are taken from the Census return of 1921, but are substantially correct at the present time.

The figures given unless otherwise stated are not the actual numbers of persons employed in any given occupation, but represent the proportion per 1,000 inhabitants aged 12 years and over.

The figures given are for males and females separately.

MALES —OCCUPATIONS.

Agriculture.

In the Administrative County the rate is 180 per 1,000; in Urban Districts, 43; and in Rural Districts, 343.

Among the Urban Districts the highest proportion occurs in Holme Cultram, 330 per 1,000. This is a district which covers a wide area, and the density of its population is characteristic rather of a rural than of an urban area.

Other notable proportions occur in Penrith, 104 per 1,000, and Wigton, 76.

Mining and Quarrying.

These form the largest group in the County, the numbers exceeding those in agriculture by about 8 per cent.

Many of the districts in the coalfield, which is in the West of the County, have very high proportions of miners, the highest being found in Aspatria U.D. and Cockermouth R.D.

The following list shows the rate of coalminers per 1,000 males of 12 years and over in all districts where the numbers are sufficiently large to be noted:—

Urban Districts.		*Rural Districts.*	
Arlecdon & Frizington	110	Alston	83
Aspatria	509	Brampton	102
Cleator Moor	20	Cockermouth	353
Cockermouth	30	Whitehaven	205
Harrington	198	Wigton	109
Maryport	249		
Whitehaven	328		
Wigton	20		
Workington	86		

Metalliferous miners number 47 per 1,000.

Miners of iron-ore were enumerated in considerable proportions in the following districts:—Arlecdon and Frizington, 340 per 1,000; Cleator Moor, 417; Egremont, 471; Millom, 233; Bootle R.D., 21; and Whitehaven R.D., 113.

Lead miners numbered 74 in Alston R.D., the proportion being 60 per 1,000.

Stone Miners and Quarriers.

The highest rates are 104 per 1,000 in Arlecdon and Frizington, 31 in Alston, 21 in Whitehaven R.D., 19 in Bootle R.D., and 18 in Millom.

Makers of coke form notable proportions in Harrington, 22 per 1,000; Whitehaven, 16; Maryport, 14; and Workington, 14.

Metal Workers.

There are noteworthy concentrations in Workington, 320 per 1,000; Harrington, 246; Millom, 178 and Maryport, 105; Alston R.D., 89, and Whitehaven R.D., 63.

Foundry Workers.

Are returned chiefly from Workington, 16 per 1,000; Millom, 16; Maryport, 11; and Whitehaven, 11.

Textile Workers.

Twenty-three per 1,000 in the Carlisle Rural Area.

Builders, Bricklayers, etc.

The proportion, viz., 40 per 1,000 in this class, is somewhat low as compared with many counties.

They are, as is usual, widely and relatively evenly distributed. The highest proportions occur in Wigton 60 per 1,000, Penrith 56, and Egremont 54.

Railway Workers.

In Workington the proportion is 53, Egremont 43, and Penrith 40.

Road Transport Workers.

The proportion in the County is 23 per 1,000. In Urban Districts 23, and Rural Districts 20 per 1,000.

A feature to be noted is that motor-drivers are relatively more numerous in rural than in urban areas.

OCCUPATIONS OF FEMALES.

The proportion of females occupied among those aged 12 and over vary considerably.

Among the Urban Districts the proportions range from 128 in Arlecdon and Frizington and 158 in Harrington, to 303 in Penrith, 305 in Cockermouth, 356 in Wigton, 367 in Keswick.

Among the Rural Districts, the average of which is 243 per 1,000, the range is from 200 in Whitehaven and 216 in Cockermouth, to 284 in Bootle, and 291 in Carlisle.

Agricultural Workers.

The proportion for the County is 51 per 1,000; 86 per cent. of these were enumerated in the Rural Districts, where the proportion is 133 per 1,000. This proportion is fairly high, but is exceeded in the Rural Districts by several other Counties.

The following showed the highest rates :—Longtown, 212; Wigton, 209; Penrith, 193.

Of the total, 72 per cent. are farmers or farmers' daughters, etc., assisting in farm work.

Textile Workers.

The highest proportion, 267 per 1,000, is found in Cleator Moor. Smaller rates in Cockermouth 116, and Carlisle R.D. 73.

Makers of Textile Goods and Articles of Dress.

The highest rates are found in Wigton, 211 per 1,000; Penrith, 123; and Egremont, 120.

Makers of Food.

High proportions are returned in Wigton, 111 per 1,000; Harrington, 71; and Maryport, 62.

The women in this group exceed the males in the ratio of 152 to 100.

The excess of females over males in this occupation is a feature typical of northern counties.

Professional Occupations.

They consist very largely of Nurses and Teachers.

Sick Nurses are almost entirely females, and average 1.8 per 1,000 total population. This rate is somewhat low as compared with many other Counties.

Female Teachers are more than three times as numerous as male ones.

Persons Engaged in Personal Services.

This constitutes the most important group.

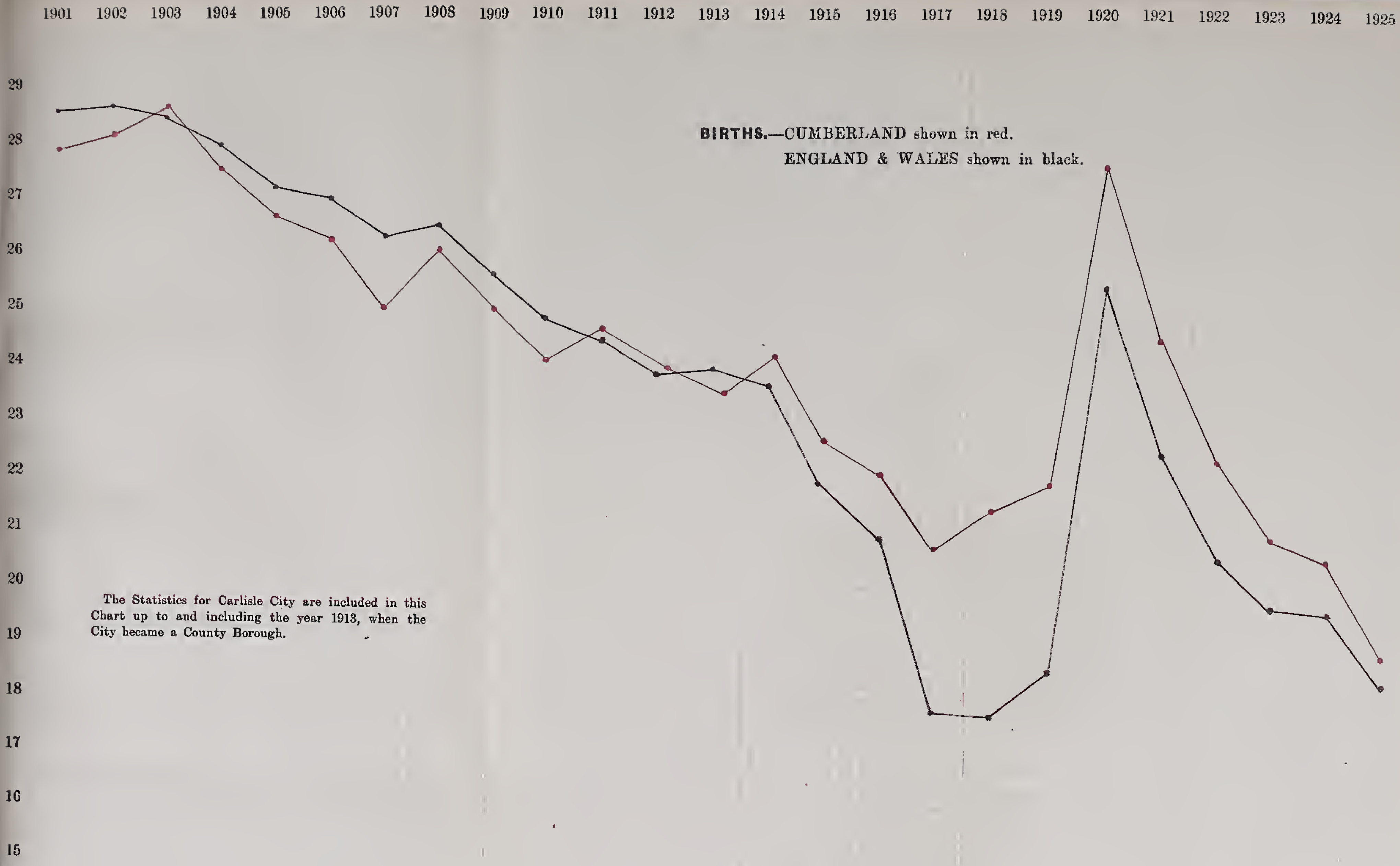
In the Administrative County the proportion is 458, the Urban and Rural portions being 405 and 519 respectively, the excess in Rural areas being a usual feature.

Of course there are many other occupations followed by both males and females, but the above notes indicate roughly the main ones.

VITAL STATISTICS.

Births.

The Births registered in the County during the year 1925 numbered 4,177 (2,102 males and 2,075 females), giving a birth-rate of 18.9 per 1,000 of population, compared with 4,496 (2,265 males and 2,231 females) and a rate of 20.3 the previous year.



BIRTHS.—CUMBERLAND shown in red.
ENGLAND & WALES shown in black.

The Statistics for Carlisle City are included in this Chart up to and including the year 1913, when the City became a County Borough.

In the Urban Districts there were 2,432 births (1,240 males and 1,192 females), giving a rate of 19.7; and in the Rural Districts 1,745 (862 males and 883 females), giving a rate of 17.8 per 1,000 of population.

The corresponding figures for the previous year were:—Urban Districts, 2,614 and a rate of 21.2; Rural Districts, 1,882 and a rate of 19.2.

NOTE.—In all these tables the figures in brackets are those of the previous year.

The birth-rate for England and Wales was 18.3 for the year.

Arranged in the order of their birth-rates the Urban and Rural Districts stand thus:—

Urban.		
Whitehaven..	26.5	(25.0)
Harrington ..	22.3	(20.3)
Maryport	21.9	(26.2)
Arlecdon and Frizington.	20.5	(24.7)
Wigton	19.5	(17.5)
Workington..	19.3	(19.9)
Egremont ...	18.7	(19.3)
Cockermouth .	18.3	(18.6)
Cleator Moor.	17.7	(20.3)
Penrith	17.0	(22.6)
Holme Cultram ...	15.6	(16.1)
Aspatria	15.5	(20.2)
Millom	14.8	(17.7)
Keswick	13.4	(17.5)

Rural.		
Longtown ...	19.8	(17.9)
Whitehaven..	19.6	(19.3)
Cockermouth..	19.3	(21.5)
Wigton	18.7	(19.5)
Brampton ...	18.3	(19.6)
Bootle	16.5	(14.2)
Penrith	16.4	(18.7)
Carlisle	13.8	(18.2)
Alston	13.2	(16.1)

The present birth-rate of 18.9 per 1,000 of population is the lowest, so far as records in my possession show, ever recorded in the County.

The accompanying graph shows the birth-rate for the past 25 years, which has declined from 27.8 in 1901 to 18.9 in 1925.

The decrease has been a steady one year by year, with the exception of the war years, and especially 1920, when there were so many post-war marriages.

This is not the place to consider the pros and cons of birth control; there can, however, be no doubt that the enormous decrease in the birth-rate is due in large measure to the deliberate limitation of the family.

Possibly the postponement of marriage to a later age than formerly has also something to do with it, and probably the emancipation of women with the greater share they take in political and other affairs have a direct effect in tending to lower the birth-rate. Possibly, too, the higher standard of social comfort demanded by both sexes is a contributing cause.

Illegitimate Births.

The number of illegitimate births was 204, so that 48 per 1,000 of the total births were illegitimate, compared with 255 and 56 the previous year.

The rates of illegitimate births per 1,000 of the total births in the various Sanitary Districts are as follows:—

Urban.			*Rural.*		
Keswick	107	(81)	Longtown	109	(85)
Holme Cultram	80	(38)	Alston	108	(45)
Aspatria	70	(81)	Bootle	90	(69)
Wigton	68	(45)	Brampton	80	(94)
Penrith	64	(101)	Carlisle	66	(64)
Arlecdon and Frizington ...	47	(54)	Penrith	65	(100)
Harrington ...	39	(75)	Cockermouth ..	56	(46)
Workington ...	36	(44)	Wigton	46	(66)
Cleator Moor...	34	(41)	Whitehaven ...	36	(37)
Cockermouth...	33	(44)			
Whitehaven ...	31	(39)			
Maryport	28	(64)			
Egremont	23	(43)			
Millom	23	(32)			

In the Urban Districts 39 and in the Rural Districts 61 per 1,000 births were illegitimate.

Deaths.

The number of deaths registered was 2,961 (1,503 males and 1,458 females). This gives a death-rate of 13.4 per 1,000, compared with 2,875 (1,500 males and 1,375 females) and a rate of 13.0 per 1,000 the previous year.

The death-rate of England and Wales was 12.2.

In the Urban Districts there were 1,750 deaths (898 males and 852 females), giving a rate of 14.3; in the Rural Districts 1,211 (605 males and 606 females), giving a

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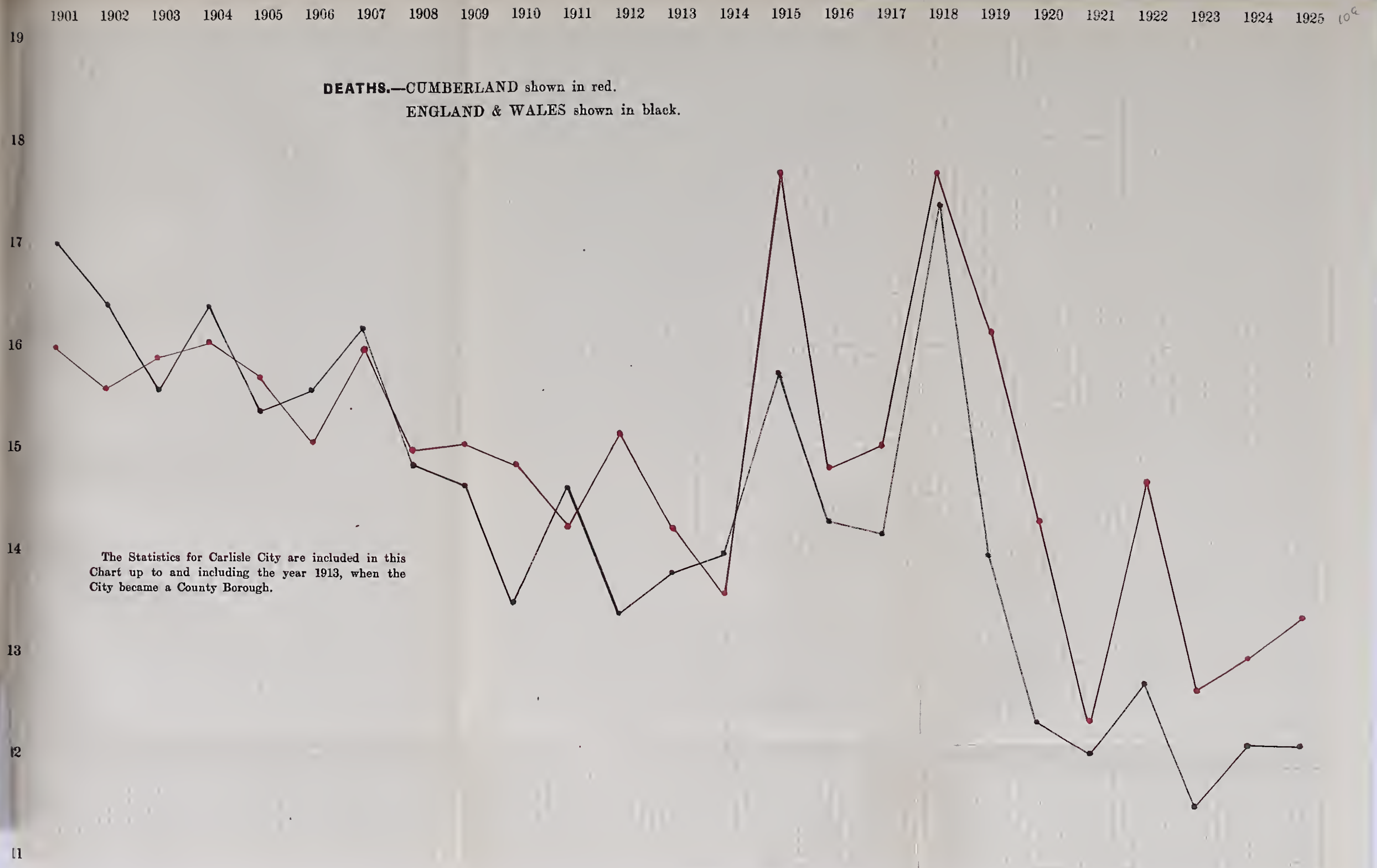


DEATHS.—CUMBERLAND shown in red.
ENGLAND & WALES shown in black.

The Statistics for Carlisle City are included in this Chart up to and including the year 1913, when the City became a County Borough.

rate of 12.4. The corresponding figures for the previous year were:—Urban Districts, 1,649 and a rate of 13.4; Rural Districts, 1,226 and a rate of 12.5.

Arranged in the order of their death-rates the Urban and Rural Districts stand thus:—

Urban.		
Keswick	19.8	(13.7)
Penrith	17.5	(15.3)
Cockermouth.	16.9	(13.5)
Holme Cultram ...	15.4	(11.3)
Arlecdon and Frizington.	15.0	(17.3)
Whitehaven ..	14.3	(14.8)
Workington ..	14.1	(12.2)
Cleator Moor.	13.3	(11.3)
Wigton	13.1	(15.6)
Millom	12.7	(13.0)
Egremont	12.6	(12.8)
Harrington ..	11.8	(9.8)
Maryport	11.8	(13.1)
Aspatria	11.1	(15.5)

Rural.		
Longtown	14.9	(12.1)
Brampton ...	13.7	(15.3)
Alston	12.6	(15.5)
Cockermouth.	11.9	(12.7)
Penrith	11.0	(13.8)
Whitehaven ..	10.4	(9.2)
Wigton	10.2	(12.9)
Carlisle	10.0	(12.0)
Bootle	9.0	(13.3)

A glance at the accompanying graph will show that the death-rate of 1925 was, with three exceptions, the lowest so far recorded.

The rate has shown an upward tendency during the years 1924 and 1925, but not to any alarming extent.

The graph shows that in 1914 the death-rate in Cumberland was slightly lower than in England and Wales, but that since that year it has been slightly higher.

Marked rises are shown in both death-rates for the years 1915, 1918, and 1922, but that for Cumberland shows a much greater rise in 1915 and 1922.

In 1915 there was a serious epidemic of measles of a malignant type, which caused 157 deaths. In the five years 1921-25 the average yearly deaths from measles was 22. Following such an epidemic it is not surprising to find that the deaths from respiratory diseases were much above the average. Whereas during the five years the average deaths from Bronchitis has been 188, in 1915 there were 307; from Pneumonia the average was 196, in 1915 there were 278.

In 1918 there was a very severe and prolonged epidemic of Influenza, which caused 655 deaths, and again after such an outbreak it is not astonishing to find that Bronchitis caused 248 deaths and Pneumonia 283, both of them considerably above the average.

In 1922 the rise in the death-rate is mainly accounted for by the epidemic of Whooping Cough, which directly caused 136 deaths, and which again was reflected in an abnormal number of deaths from Bronchitis and Pneumonia.

It is of interest to note the age periods at which deaths occur and to compare Urban with Rural areas.

During the five years under review :—

14.9% in Urban and 11.2% in Rural Districts died under 1

4.4	,,	2.7	,,	aged 1 to 2 yrs.
3.4	,,	1.5	,,	aged 2 to 5 yrs.
3.6	,,	2.2	,,	aged 5 to 15 yrs.
4.6	,,	3.8	,,	aged 15 to 25 yrs.
11.0	,,	9.4	,,	aged 25 to 45 yrs.
21.5	,,	20.8	,,	aged 45 to 65 yrs.
18.9	,,	21.6	,,	aged 65 to 75 yrs.
17.4	,,	26.0	,,	over 75 yrs.

Infant Mortality.

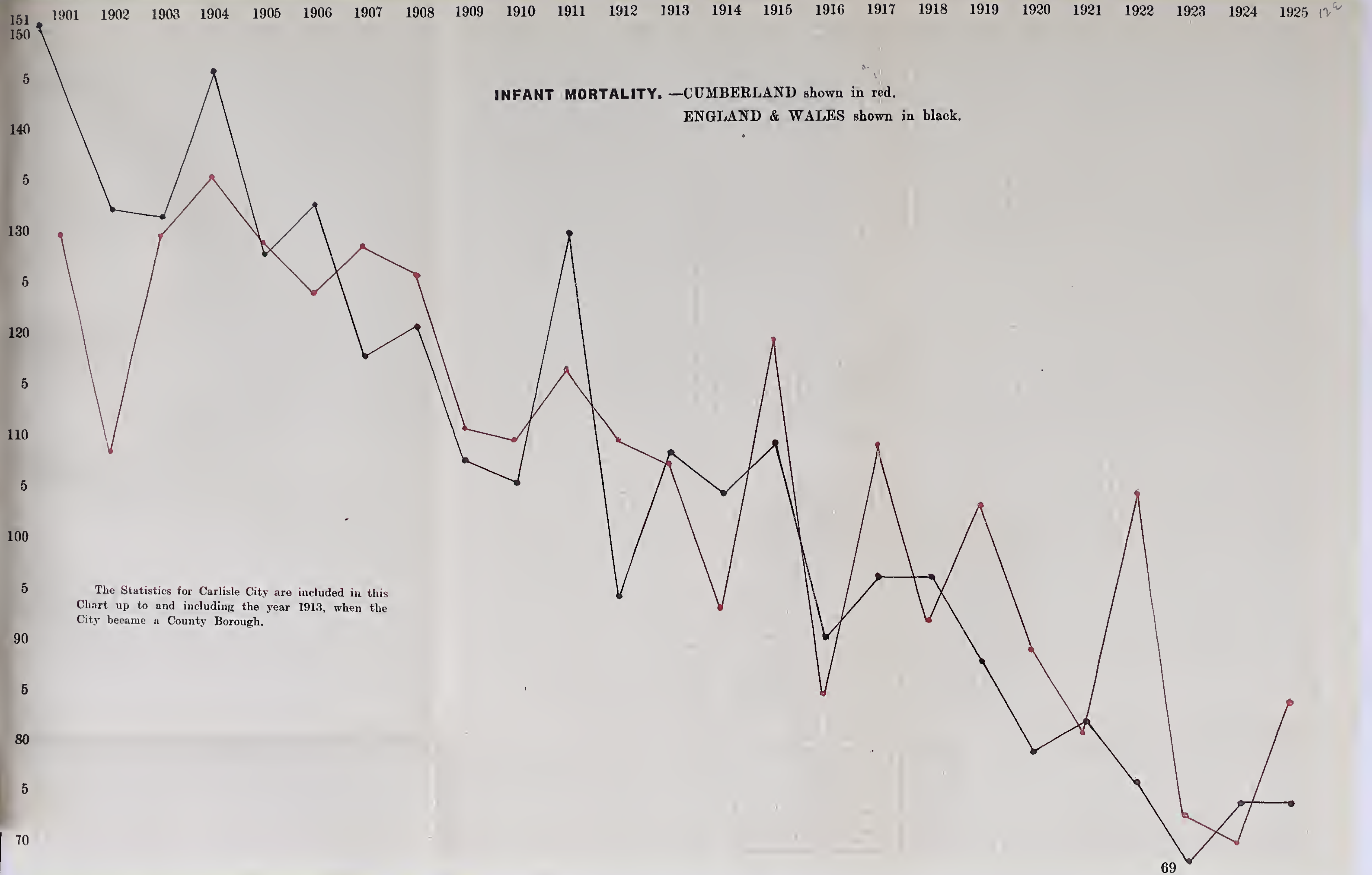
4,177 births were registered and 357 infants died before they reached the age of one year;. The Infant Mortality was, therefore, at the rate of 85 per 1,000 births, 13 per 1,000 higher than last year.

The Infant Mortality in England and Wales was 75 per 1,000 births.

In the Urban Districts there were 2,432 births and 232 deaths of infants. The infant mortality rate was, therefore, 95 per 1,000 births, 14 per 1,000 higher than in the previous year.

In the Rural Districts there were 1,745 births and 125 deaths of infants, giving an infant mortality rate of 71 per 1,000 births, 10 per 1,000 higher than last year.

The mortality rate of legitimate infants was 81, that of illegitimate infants 157 per 1,000 births.



Arranged in the order of their Infant Mortality rates the Urban and Rural Districts stand thus:—

Urban.			*Rural.*		
Cleator Moor...	135	(122)	Cockermouth...	89	(76)
Workington ...	121	(80)	Longtown	86	(34)
Maryport	109	(82)	Penrith	80	(61)
Wigton	109	(61)	Whitehaven ...	75	(47)
Arlecdon and Frizington....	104	(100)	Carlisle	66	(64)
Millom	93	(117)	Wigton	64	(44)
Whitehaven ...	92	(73)	Bootle	50	(81)
Keswick	89	(27)	Alston	27	(45)
Holme Cultram	80	(38)	Brampton	27	(75)
Egremont	68	(100)			
Harrington	59	(75)			
Aspatria	52	(54)			
Penrith	49	(37)			
Cockermouth...	33	(131)			

As the accompanying graph shows there is a gratifying though somewhat erratic downward tendency in the infant mortality, and though the fall has, no doubt, been considerably interfered with by the war and subsequent events, still the fact remains that on the whole the fall in infant mortality in Cumberland, gratifying though it is, has not been so steady or so marked as in England and Wales as a whole.

Of the total infant deaths in 1925, 27.5 per cent. occurred before the infant was 1 week old, and of the remainder 37.2 per cent. died before they were three months old; thus 64.7 per cent. of the total infant death-rate occurs before the infants are three months old, indicating that some cause or causes are at work to lessen the baby's chances of life before it is born, and this is borne out by the fact that of the total infant deaths last year, 38 per cent. were certified as due to Congenital Malformation, Atrophy, Marasmus, Injury at Birth or Premature Birth. This being so, and bearing in mind the falling birth-rate, it points out to us the increasing necessity of paying more and more attention to the health of expectant mothers, about which I will have something to say under the section dealing with Maternity and Child Welfare.

Cancer.

310 deaths were registered as due to Cancer, a rate of 1.4 per 1,000 of poulation, as compared with 273 deaths and a rate of 1.2 the previous year.

Arranged in order of their death-rates from Cancer the Urban and Rural Districts stand thus:—

Urban.		
Keswick	2.1	(0.9)
Arlecdon and Frizington ...	1.9	(1.3)
Harrington	1.9	(0.4)
Penrith	1.9	(1.8)
Millom	1.7	(0.8)
Wigton	1.6	(1.8)
Aspatria	1.4	(2.1)
Cleator Moor ...	1.4	(0.4)
Cockermouth ...	1.4	(0.8)
Holme Cultram.	1.4	(2.2)
Maryport	1.4	(1.1)
Egremont	1.2	(1.4)
Workington	1.1	(1.3)
Whitehaven	1.0	(1.3)

Rural.		
Alston	4.1	(1.1)
Brampton	2.1	(1.4)
Bootle	1.3	(1.6)
Carlisle	1.3	(1.2)
Longtown	1.2	(0.8)
Wigton	1.2	(1.4)
Whitehaven	1.0	(0.9)
Cockermouth ...	0.9	(1.2)
Penrith	0.4	(1.2)

The following notes on Cancer are taken from various Circulars issued by the Ministry of Health:—

In England and Wales, with a population of 18,996,916, in 1851-60, 60,196 deaths from Cancer occurred, equal to 317 per million living per annum. In 1911 to 1920, in an estimated population of 35,750,765, the number of deaths from Cancer was 399,511, equal to 1,117 per million.

To some extent this great increase is due to the fact that a larger proportion of the population than formerly is now of those ages at which deaths from Cancer commonly occur, but when full allowance has been made for this ageing of the population, the increase is still so marked that in the space of two generations the mortality from Cancer has trebled.

There can be little doubt that improved diagnosis and more accurate certification of death have contributed, but they cannot be said to account for the whole of the increase.

During the period of 20 years, from 1901 to 1921, in which Cancer increased by 20 per cent., the general death-rate fell by 32 per cent., that of infants by 45 per cent., and that from tuberculosis by 38 per cent., while substantial declines were recorded in respect to most other causes of mortality.

The latest available returns show that the death-rate from Cancer is not increasing for males up to 45 and for females up to 60. . The most rapid increase is occurring in extreme old age.

In a broad sense, liability to Cancer is not an attribute of any particular social class, profession, or occupation.

It is right to point out that hereditary predisposition to Cancer has not at present been proved to be of any practical importance in man; that it cannot be asserted with scientific authority that the use of any particular article of food increases the liability to Cancer or prevents it from appearing; that no known drug or preparation will prevent its appearance or cure it when present; and that no danger of Cancer has been proved to result from inhabited houses or districts in which Cancer happens to have been exceptionally common. There is no evidence to show that Cancer is an infectious or contagious disease.

One certain fact about Cancer is that it frequently follows a chronic and prolonged irritation. Not all tissues, however, are equally liable in this respect. The palm of the hand, e.g., in spite of its exposure to chronic irritation of all kinds, is probably never the seat of Cancer.

In the female breast Cancer occurs far more commonly in the deeper parts of the gland than in the nipple, which is more exposed to injury.

Some tissues show a special liability to develop Cancer during chronic irritation, such as the skin of the face, the lips, the inside of the cheeks, tongue, lower part of bowel, neck of womb, &c.

Certain variations of chronic irritation, too, are more liable to be followed by Cancer than others. Thus in the lip long continued irritation by a clay pipe is particularly dangerous; in the tongue irritation by a jagged tooth or badly fitting tooth plate; in the womb the chronic ulceration which may follow confinement. Again, syphilitic disease affecting the tongue or female external generative organs, or tuberculosis of the skin (lupus) affecting the face, particularly if it has necessitated prolonged treatment, is liable to end in Cancer. And lastly, workers in tar, such as briquette makers, workers with aniline or paraffin, chimney sweeps, and mule-spinners are apt to suffer from Cancer in special parts of the body as a consequence of repeated irritation by the particular agent concerned.

Since Cancer is occurring more commonly in certain sites, it is prudent to notice and remove causes of chronic irritation in these sites, e.g., removal of rough stumps of teeth or replacement of badly fitting dentures; a change of habit if pipe smoking is found to produce soreness on the same spot of the tongue or lip, &c.

Early diagnosis is of the greatest importance. This means not only diagnosis of the actual existence of Cancer, but, even more, diagnosis of abnormal conditions that are common precursors of Cancer.

Cancer itself in its early stages is almost invariably unaccompanied by pain, and is sometimes painless throughout. This painlessness of Cancer in its early stages is one of its most insidious dangers, since it leads to delay in seeking medical advice.

Early diagnosis obviously depends upon co-operation between the patient and the doctor. Medical advise should be sought at once, particularly if a tumour or lump is found in the breast, if an ulcerated condition of the tongue, lip, or skin persists, if there is present hoarseness, if a mole or wart shows a tendency to grow, if blood or mucus is passed with the stools, if there is bloody or offensive discharge at other than the normal monthly periods.

If a person has not recognised that something is wrong—and such cases do occur—nothing more can be said. But very many persons are aware that something is wrong, fear that it may be Cancer, and put off consulting a doctor because they think that if Cancer be diagnosed an operation will be necessary.

Quite apart from the fact that anæsthetics and antiseptics have robbed operations of many of their terrors, and that many such cases would not be cancerous at all, the chances of a patient must be better the earlier he or she comes under treatment.

Most medical authorities believe that in Cancer early operation affords the best chance to the patient.

The essential point is that the patient should not postpone or delay seeking competent medical advice, and above all should not waste time or money by trying quack remedies, which at best are useless, and at worst aggravate the disease.

In any case in which Cancer is suspected immediate and decisive action is necessary.

Zymotic Diseases.

The diseases usually included in this category are:— Enteric Fever, Measles, Smallpox, Scarlet Fever, Whooping Cough, Diphtheria, and Diarrhœa.

135 deaths were registered from these diseases, compared with 92 the previous year. This gives a rate of 0.6, compared with 0.4 in 1924.

The death-rate from Zymotic or special febrile diseases is an important fact to be noted among all communities, as it furnishes a very popular standard as to their general healthiness.

It will, however, be readily understood that it is liable to great fluctuations according to the greater or less prevalence of one or other of these diseases, so that the mean Zymotic death-rate over a series of years is of little or no value, but on the other hand an annual rate is of value as indicating the prevalence of one or other of these diseases.

Thus in 1922 the rate was high because there were 136 deaths from Whooping Cough.

In 1925 again it was slightly raised owing to there being 36 deaths from Whooping Cough and 30 from Measles.

Neither of these diseases is dependant upon defective sanitary conditions, but when the Zymotic death-rate is raised by an excessive mortality from Enteric or Diphtheria it furnishes a valuable clue to imperfect sanitary conditions in the area, and whilst these conditions continue to exist those living in them are more liable to "catch" infection when exposed to it.

Arranged in order of their death-rates from Zymotic diseases the Urban and Rural Districts stand thus:—

Urban.		
Wigton	1.6	(1.1)
Arlecdon and Frizington ...	1.1	(0.2)
Workington	1.0	(0.5)
Cleator Moor ...	0.6	(nil)
Egremont	0.6	(0.2)
Harrington	0.6	(nil)
Maryport	0.6	(0.9)
Whitehaven	0.6	(0.7)
Aspatria	0.5	(1.1)
Cockermouth ...	0.4	(0.1)
Penrith	0.3	(0.1)
Holme Cultram.	0.2	(0.2)
Millom	0.2	(1.0)
Keswick	nil	(0.2)

Rural.		
Cockermouth ...	0.8	(0.2)
Brampton	0.7	(0.1)
Whitehaven	0.3	(nil)
Longtown	0.3	(0.1)
Wigton	0.2	(1.3)
Carlisle	0.1	(0.1)
Penrith	0.7	(0.2)
Alston	nil	(nil)
Bootle	nil	(0.1)

Respiratory Diseases.

From these diseases—chiefly Bronchitis and Pneumonia—there were 467 deaths, compared with 434 the previous year.

In the Urban Districts the death-rate from these diseases was 2.5, against 2.1 the previous year; and in the Rural Districts 1.6, against 1.7 the previous year.

The death-rate in the Administrative County from these diseases was 2.1, against 1.7 the previous year.

Arranged in the order of their death-rates from Respiratory Diseases the Urban and Rural Districts stand thus:—

Urban.		
Whitehaven	3.5	(2.8)
Cockermouth ...	3.1	(3.6)
Holme Cultram.	2.9	(0.6)
Workington	2.8	(1.6)
Keswick	2.6	(1.6)
Egremont	2.4	(2.2)
Arlecdon and Frizington ...	2.3	(3.4)
Cleator Moor ...	2.2	(1.7)
Maryport	2.0	(2.9)
Millom	1.7	(2.0)
Aspatria	1.6	(1.1)
Wigton	1.6	(2.3)
Penrith	1.4	(1.7)
Harrington	1.3	(1.5)

Rural.		
Cockermouth ...	2.2	(2.6)
Whitehaven	2.0	(1.7)
Brampton	1.9	(2.3)
Alston	1.1	(1.8)
Bootle	1.0	(1.6)
Wigton	0.9	(0.9)
Carlisle	0.7	(0.9)
Longtown	0.6	(1.9)
Penrith	0.5	(1.0)

Deaths from Respiratory Diseases, although in 1925 they caused 15.7 per cent. of the total deaths, have in recent years shown a marked tendency to decline.

During the five year period 1916-20 the proportion of deaths from these diseases was 2.5 per 1,000 of population, whilst during the period 1921-25 the proportion was 1.9 per 1,000 of population

Both Bronchitis and Pneumonia are most prevalent and most fatal at the two extremes of life, the vast majority of deaths occurring in young children under five years of age and in elderly people over 45, but more particularly in those of 65 years of age and over.

I can only attribute the lessened death-rate from these diseases to the greater interest the majority of people are beginning to take in their own and their children's health, to the fact that insanitary surroundings are gradually being cleared away from the immediate neighbourhood of their homes, to the increasing belief in the efficacy of fresh air and sunlight as health givers, to the great improvement in the feeding of infants and young children; in short, to the fact that the " sanitary conscience " of the people is gradually, though somewhat slowly, being awakened.

Poor Law Relief, &c.

Poor Law Union.	Approximate Amount of Poor Law Relief issued in 1921-25 (5 years).	Extent to which Hospital and other forms of gratuitous medical relief are utilised.	Extent Hospital is made use of for other than Poor Law Cases.
	£		
Alston with-Garrigill	4605	Practically nil as far as medical relief is concerned.	Nil. No Poor Law Hospital.
Bootle	49408	The Institution Hospital is used for all ordinary cases. Special cases sent to Whitehaven, Barrow, or Carlisle.	Nil.
Brampton	7265	Destitute persons requiring nursing attendance are treated in the Poor Law Institution.	Nil.
Carlisle	58559	Destitute persons requiring nursing or medical attendance are treated in Fusehill Hospital.	Paying medical patients are treated but not to the exclusion of Poor Law cases.
Cockermouth	170387	Poor Law Patients requiring Hospital treatment are dealt with in the Poor Law Hospital, except cases for operative or special treatment.	Practically nil.
Longtown	—	Nil.	Nil.
Penrith	52000	A Hospital with 6 to 8 beds. Outdoor medical relief to sick outdoor Poor.	Nil.
Whitehaven	285776	Destitute persons not contributors under the Health Insurance Acts, and not entitled to medical treatment.	Nil.
Wigton	12500	Nil.	Nil.

Any causes of sickness or invalidity which have been specially noteworthy in the area during the period under review; and any conditions of occupation or environment which appears to have had a prejudicial effect on health:—

The most noteworthy feature during the period was the outbreak of Smallpox in 1924, which is dealt with fully in my report for that year; beyond this there has been nothing of note. There have been periodic outbreaks of the ordinary infectious diseases, but none of them so severe or so prolonged as to call for special comment, with the exception of the Influenza Epidemic in 1922, which was the direct cause of 178 deaths, and the indirect cause of many more from respiratory diseases Diphtheria was almost epidemic in Maryport in 1923, and again in 1925.

What might have been serious epidemics of Diphtheria and Scarlet Fever in Keswick were stopped by the prompt and energetic action taken by the Medical Officer of Health (Dr. Burnett).

In January a case of Diphtheria was notified at a dairy farm; the milk supply was stopped pending the examination of swabs from contacts. One contact was found to be a carrier, who was promptly dealt with. There was only one further case.

In June an outbreak of Scarlet Fever was traced to an unrecognised case at a dairy farm; prompt action was the means of arresting what might have been an epidemic having serious financial results on a town like Keswick.

It cannot reasonably be said that any occupation affects adversely the health of those employed in it.

General Provision of Health Services.

HOSPITALS PROVIDED OR SUBSIDISED BY THE COUNTY COUNCIL.

1. *Tuberculosis.*

(a) Blencathra Sanatorium. Here 30 beds are subsidised for pulmonary cases in adult males and females. In the past two years a considerable number of children have also been admitted.

(b) Ten beds are subsidised at the Stannington Sanatorium, near Morpeth, for children—mostly pulmonary cases—but occasionally a non-pulmonary case is sent.

(c) For surgical tuberculosis the majority of cases are sent to the Ethel Hedley Hospital, Windermere, and some to the Shropshire Orthopædic Hospital, Oswestry.

No special number of beds is subsidised in either of these Institutions, but no difficulty is, as a rule, experienced in getting our cases admitted.

(d) Englethwaite Tuberculosis Colony. This Colony, which has been closed since November, 1925, was opened for the reception of patients in 1920, and had accommodation for 40 male patients.

The history of the Colony is dealt with later in this report (see report of the Medical Superintendent, Dr. Mark Fraser).

(e) Since the closing of the Colony, the Tuberculosis Officer has instructions to send suitable cases of ex-service men, who wish to go, to any of the following Institutions:

The Cambridgeshire Tuberculosis Colony, Papworth Hall, Cambridge; The British Legion Village Industrial Settlement, Preston Hall, Aylesford, Kent; or The East Lancashire Tuberculosis Colony, Barrowmore Hall, Great Barrow, Chester.

2. *Maternity.*

The only Maternity beds provided in the County are those in the new Whitehaven and West Cumberland Hospital, one of which is subsidised by the County Council.

3. *Children.*

The attached table shows the provision in the voluntary hospitals for the treatment of children. The beds subsidised by the County Council for the treatment of non-tubercular cripples, ear, nose, and throat cases, are dealt with in the report of the School Medical Officer. Urgent cases in these groups of children under school age are dealt with on the same lines, under the Maternity and Child Welfare section.

Name of Address or Hospital.	Accommodation for Children.	Terms and Conditions of Admission.
The Cumberland Infirmary, Carlisle	One ward of 22 beds	Patients' relatives are expected to pay as far as they reasonably can. Cases admitted in order of urgency
The Workington Infirmary, Workington	One ward. Six cots and four beds. If required, two further beds available	Children belonging to working men subscribers are admitted free. Other cases charge is fixed by the Committee
The Whitehaven and West Cumberland Hospital, Whitehaven	One ward—20 beds. Isolation ward—one bed	Workmen subscribers' children free up to age of 16. By subscribers' recommendation. Non-subscribers 25/- per week
Keswick Cottage Hospital, Keswick	Two cots	Each case is considered by the Committee, who fix the charge
Penrith Cottage Hospital, Penrith	One Cot in Female Ward. One cot in Male Ward	Ditto (Private Ward at a charge of £4 4s. 0d. per week)
Maryport Cottage Hospital, Maryport	No special arrangements, but children admitted	Workmen subscribers' children admitted free. Non-subscribers' children under age of 12 3/- per day
Brampton Cottage Hospital, Brampton	Ditto	Fees are fixed according to the circumstances of parents
Cockermouth Cottage Hospital, Cockermouth	No special accommodation, but children are admitted, except children under two years of age, who are only admitted in urgent cases	A charge of 15/- per week is made in cases over 2 years of age, but in certain necessitous cases no fee has been requested.
Alston Cottage Hospital, Alston	No special accommodation for children, but cases are admitted to either Male or Female Wards	The charge varies in accordance with the circumstances of the patients' parents, but the maximum is 15/- per week

(4) and (5). The followig accommodation for infectious cases is provided by the various Local Authorities.

Sanitary District.	Hospital.	No. of beds.	Fever treated.	Smallpox.	Ambulance Facilities.. Fevers.	Ambulance Facilities.. Smallpox.
Workington Borough	Ellerbeck	40, and if necessary 9 in huts adjoining	Scarlet, Diphtheria, Enteric	Derwent Joint Hospital, Camerton	Their own Motor Ambulance	Derwent Joint Hospital Motor Ambulance
Whitehaven Borough	Bransty	24 beds, 10 cots	Do.	Do.	Galemire Motor Ambulance	Do.
Arlecdon & Frizington U.D. Cleator Moor U.D. Egremont U.D. Harrington U.D. Whitehaven R.D.	Galemire, in the Whitehaven Rural Area	44	Diphtheria, Scarlet	Do.	Do.	Do.
Keswick U.D.	Whinlatter	8, 1 Cot	Do.	Do.	Horse Ambulance	Do.
Millom U.D. Bootle R.D.	Crab Marsh	34	Scarlet, Diphtheria, Enteric	Have a Joint Hospital, 12 beds	Do.	Horse Ambulance
Penrith U.D. Penrith R.D.	Penrith Isolation Hospital	22	Do.	Do. 8 beds	Motor Ambulance	Motor Ambulance
Holme Cultram U.D.	Silloth Port Sanitary Hospital	Have use of 2	Do.	Wooden hutments, 5 beds	Horse Conveyance	Horse Conveyance

Maryport U.D.	Isolation Hospital	10	Do.	Do.	Wheeled (hand) Stretcher	Derwent Joint Hospital Ambulance
Aspatria U.D. Cockermouth U.D. Wigton U.D.	No provision for isolating cases			Derwent Joint Hospital, Camerton	No provision	Do.
Carlisle R.D.	Sends cases to Carlisle City Hospital, both Fever and Smallpox, and has use of Motor Ambulance					
Cockermouth R.D. *	Broughton Moor	12	Scarlet, Diphtheria, Enteric	Derwent Joint Hospital, Camerton	Horse Ambulance	Derwent Joint Hospital Ambulance
Alston R.D. Brampton R.D.	No accommodation, but negotiations are taking place to form a Joint Hospital Board with Longtown and an adjoining area in Northumberland			Derwent Joint Hospital	No provision	Do.
Longtown R.D.	The Isolation Hospital, Longtown	—	Scarlet, Diphtheria	Do.	Motor Ambulance	Do.
Wigton R.D.	Noprovision	—	—	No provision	—	—

* Cockermouth Rural District Hospital at Broughton Moor can only treat one infectious disease at a time. The Medical Officer has repeatedly pointed out that the Hospital is too small.

6. *Other.*

The only class falling under this group is that which provides for the in-patient treatment of Venereal diseases. Apart from the occasional emergency admissions to the Cumberland and Whitehaven Infirmaries, pregnant female cases of Venereal disease are admitted as occasion arises to the Hope Hospital, Leeds.

There is no provision for unmarried mothers, illegitimate infants, and homeless children in the area, beyond that provided by the Poor Law Authorties

Ambulance Facilities.

(a) For Infectious cases, see table relating to hospital accommodation.

(b) For Non-Infectious and Accident cases. For the Urban Districts of Arlecdon and Frizington, Cleator Moor, Egremont, and Whitehaven, a motor ambulance is kept at Whitehaven and used for accidents in mines and quarries.

A motor ambulance is available at the Whitehaven Infirmary, maintained by the local branch of the St. John Ambulance Association, for other cases.

Cockermouth U.D. has a wheeled stretcher at the Police Station, and a horse ambulance belonging to and at the Poor Law Institution.

Harrington U.D. a motor ambulance for colliery and works accidents.

Keswick U.D. has a motor recently presented for the use of the town and district.

Maryport U.D. has a wheeled (hand) stretcher at the Cottage Hospital, and at the Police Station. Also a hand stretcher at the Docks.

Millom U.D. a motor ambulance under the direction of a Voluntary Committee.

Penrith U.D. one motor ambulance for all purposes.

Workington.- Motor ambulances of the Colliery Owners' Association, and the United Steel Co., Ltd.

Whilst Aspatria, Holme Cultram, and Wigton have no provision.

Of the Rural Districts, Whitehaven and Penrith have the same facilities as the Urban Districts.

Carlisle and Longtown make use of the City ambulances.

Cockermouth has a horse ambulance at the Poor Law Institution, and a motor at Brigham Rescue Station.

Alston, Bootle, Brampton, and Wigton have no provision.

Clinics and Treatment Centres.

The following table shows the Centres provided by the County Council.

In all cases the same building is used for all purposes. The accommodation consists of a consulting room and suitable waiting rooms.

Treatment Centres for Venereal Diseases are dealt with in the section dealing with these diseases.

Days and Hours of Attendance at Treatment Centres.

Centres.	*School Clinic.*	*Dispensary.*	*M. & C. W. Clinic.*
Cleator Moor ... Stirling's Infirmary.	1st and 3rd Mondays 9-30 to 12-15 and 2 to 4 p.m.	2nd and 4th Tuesdays 1-30 to 3-30 p.m.	2nd and 4th Tuesdays 9-30 to 12.
Millom ... Dunedin, Lapstone Rd.	1st and 3rd Tuesdays 9-30 to 12-30.	1st and 3rd Tuesdays 1-30 to 3-30 p.m.	1st and 3rd Tuesdays 12 to 1 p.m.
Wigton ... Proctor House, Proctor Row.	2nd and 4th Mondays 9-30 to 12 noon.	2nd and 4th Mondays 1 to 3-30 p.m.	Alternate Wednesdays (Vol.) 2 to 4-30. During winter months.
Egremont ... The Hut.	Thursdays 10 to 12.	2nd and 4th Thursdays 3 to 4 p.m.	2nd and 4th Thursdays 1 to 3 p.m.
Maryport ... 58 Curzon St.	2nd and 4th Fridays 9-45 to 12.	2nd and 4th Fridays 1-30 to 3-30 p.m.	Tuesdays 2 to 4-30 p.m.
Penrith ... Southend House, Southend Road.	2nd and 4th Tuesdays 10 to 1 p.m.	2nd and 4th Tuesdays 1-45 to 3-30 p.m.	—
Cockermouth ... Harford House, Main Street.	2nd and 4th Mondays 9-30 to 12.	2nd and 4th Mondays 2 to 4-30 p.m.	—
Whitehaven ... 102 Scotch Street.	—	Every Monday 2 to 4.	—
Workington ... Victoria Buildings, William St.	—	Monday 2 p.m. Friday 3-30 p.m.	—
Arlecdon & Frizington. ... Thirlmere House, Frizington.	—	—	2nd and 4th Fridays in each month, 2 to 4 p.m.

Public Health Officers of the County Council.

PRESENT (1926) STAFF

	Whole-time.	*Appointed.*
F. H. Morison, M.D., D.P.H. ...	County Medical Officer of Health ...	1908
Kenneth Fraser, M.D., D.P.H., D.T.M.&H. ...	Deputy Do. ...	1912
Mark S. Fraser, M.D., D.P.H., F.R.C.S.E. ...	Senior Assistant Do. ...	1914
A. C. B. McMurtrie, M.C., M.D., D.P.H., F.R.C.S.E. ..	Venereal Diseases Officer, Assistant M.O.H. ...	1920
Arthur H. Towers, M.B., Ch.B., D.P.H. ...	Assistant M.O.H. ...	1921
H. C. Simpson, L.M.S., S.A., D.P.H. ..	Do. ...	1926

Part-time.

Malcolm Manson, M.C., M.A., M.D., D.P.H. ...	Part-time Tuberculosis Officer
R. W. Macpherson, M.D., D.P.H. ..	Part-time Tuberculosis Officer
C. A. Mason, M.B., Ch.B., D.P.H. ...	Part-time Tuberculosis Officer
R. H. Quine, L.R.C.P.E., L.M., D.P.H. ...	Part-time Maternity and Child Welfare

Name.	*Qualifications.*
King, Alice Beatrice ...	4 years Hospital St. George's, London; 2 years Fever Training, Coventry; District and Maternity Training, Shoreditch, St. Mark's Hospital for Fistula, London.
Reid, Jane ...	3 years Hospital — Edinburgh Royal; C.M.B. Certificate; Children's Orphanage, Riversdale-on-Hudson; Presbyterian Hospital, New York, Post-Graduate Course; six months Military Camp Hospital, Mansfield; General Isolation Hospital, Calais, Sister in T.B. Ward six months.
Brownlie, Grace Robertson P. ...	3 years Hospital, West Middlesex; 3 years Cottage Hospital, Blairgowrie; Edinburgh Maternity Hospital, C.M.B. Certificate.
Dial, Elizabeth ...	3 years Hospital, South Manchester (including six months T.B. Ward), C.M.B. and one year's District Training.
Johnston, Elizabeth ...	3 years Hospital, C.M.B. Certificate.
Lawson, Elsie Mary ...	3 years Hospital, Brown Cow Hill, Liverpool; C.M.B. Certificate.

Name.	*Qualifications.*
Marchbank, Jane Nichol	3 years Hospital; C.M.B.; T.B. experience; Health Visitor and School Nurse Certificate; Staff Nurse and Charge Sister, Military Hospital.
Hind, Ruth J. V.	3 years Hospital; Military Hospital experience; Edinburgh Maternity Hospital, C.M.B. Certificate.
Burrows, Mona, County Council Midwife	3 years Hospital, Kendal; District Training, C.M.B., Huddersfield; Training Midwife 2 years, Huddersfield.
Carverhill, Gladys, County Council Midwife	3 years Hospital, C.M.B. Certificate.
Postlethwaite, A., Dental Nurse	3 years Children's Hospital, Edinburgh.
King, Doris G., Lecturer	5 years Children's Hospital, Pendlebury; 2 years Children's Orth. Hospital, London; 6 years General Hospital, Guy's, London C.M.B.; Massage Certificate; Certificate for National Society for Health, Maternity & Child Welfare; Certificate Sick-room Cookery; Certificate Lancashire & Cheshire Board Physiology & Hygiene (Distinction).
Nelson, Frances D., After-care Worker (Orthopædics)	Liverpool Physical Training College; Massage, Electrical, X-Ray, Remedial Exercises, Plaster & Orthopædic Appliances experience.

Professional Nursing in the Home.

(*a*) *General.*

Practically the whole County is covered by District Nurses, belonging to the Cumberland or the West Cumberland Nursing Associations, or to the two or three small local associations which are not affiliated. The District Nurses do most valuable work in attending to the needs of the poor in their own homes.

Cases of tuberculosis receiving home treatment and who require nursing, are regularly visited by the District Nurses, and an agreed fee is paid to the Nursing Association by the County Council.

Arrangements are also made for the District Nurses to visit children under school age from 1 to 5 years of age, and to keep them under supervision so far as is possible.

During the year 1925, 242 minor ailments were thus treated by the Nurses, and medical treatment was secured for 222 children of that age at their own homes.

With the exception of the Borough of Whitehaven no special arrangements are made for nursing infectious cases in their own homes, and by the rules of the Nursing Associations, the District Nurses are prevented from doing so.

In the case of Measles and Whooping Cough, I think it is much to be regretted that the District Nurses are not allowed to give their help, as with ordinary simple precautions there is not the slightest risk of a Nurse conveying infection from one house to another. I have no doubt that the mortality from both Measles and Whooping Cough could be greatly reduced with better nursing.

The Nursing Associations should, I think, reconsider their rules on this point.

Special arrangements are made in the Borough of Whitehaven, and are referred to in the Medical Officer's (Dr. Manson) report.

" For some years past all cases of infectious disease, such as Measles and Whooping Cough, notified to me from the Schools, or coming otherwise to the knowledge of the Health Department, have been visited by the Health Visitors, principally with a view to seeing that medical advice is being obtained. It is also the duty of the visiting nurse to see that the patient is being properly attended to, so far as nursing is concerned, and in cases where assistance in this direction is necessary to give such help as she can. This arrangement has already proved itself to be of value by its educational effect, as people are beginning to realise that Measles and Whooping Cough are serious diseases, requiring serious treatment; and once this is fully realised we may expect to see a considerable diminution in the mortality from these diseases, and also in the serious complications which so frequently attend them."

Sanitary Circumstances of the County.

Water Supplies.

The accompanying table gives a condensed summary of the water supplies in the Urban Districts of the County.

Speaking generally it may be said that most of the Urban Districts have a satisfactory and ample supply, but some of them are not free from risks of contamination—these will be referred to in the text of the report.

Many changes and improvements have taken place within the five years under review, e.g. :—

Harrington Urban District.—Up to 1922 this district, which received its supply from the Workington Corporation, had to pump the water from Stainburn to a reservoir, and as the supply in the reservoir frequently became exhausted the inhabitants had to go without water until pumping was again started.

Now the supply from Owsen Fell is an ample and constant supply. As the Medical Officer of Health (Dr. Cullen) says :—

" After long years of shortage, muddiness, intermittency, and all evils attending on a supply which had to be pumped from Stainburn, where we received it from Workington Corporation, we, in conjunction with the Whitehaven Rural District Council, have now got a supply of water sufficient for our present and future needs, a constant supply and with far more pressure than is needed to reach the highest part of the district. The source is from Owsen Fell, Lamplugh, with no possible means of contamination at its source. Admirable for domestic and drinking purposes. With the excepton of a few outlying farms all the district is directly supplied from our mains."

Holme Cultram.

This Urban District is peculiar in that some parts of it are definitely Urban in character and other parts are definitely Rural.

Speaking generally, it may be said that in the Urban parts there is an ample and constant supply of good water through the Aspatria and Silloth Water Board, but that the Rural parts are supplied from shallow wells of unsatisfactory quality, insufficient quantity, and all liable to serious contamination.

The Urban parts, with a satisfactory supply, comprise Greenrow, West Silloth, Silloth, and Skinburness, all in the Holme Low area.

In the Rural parts of Holme Low, in a few cases the owners of farms have, at considerable expense, had connections made to the Water Board's main.

Water Supply.—Urban Districts.

Urban Districts.	Source.	Possibility of Contamination.	Quality.	Sufficiency.	Constant or Intermittent.	Any part insufficiently supplied.	No. of Dwelling-houses and the proportion of the Population Supplied.		
							District.	From Standpipes.	From Wells.
Arlecdon and Frizington	Springs in fells. Cogra Valley	None	Very good	Plenty	Constant	No	1,000	None	None
Aspatria	Aspatria and Silloth Water Board from Overwater	None	Good	Ample	Constant	No	Practically all	None	None
Cleator Moor	Moorland gathering ground in the Cogra Valley	Very remote. No habitation above intake	Very good	Ample	Constant	No	1,641 by Council, 69 by private owners	None	None
Cockermouth	Crummock Lake	None	Good	Ample	Constant	At times in high district	All except 3 farms and 2 residences, supplied from springs in hills	None	Supply to 6 houses
Egremont	Reservoir. Wormgill Valley	None	Good	Ample	Constant	No	All except five. One at Ravelsage from a good spring, & Marlboro Farm an intermittent supply	None	3 houses at Kellhead. A good well
Harrington *	Owsen Fell, Lamplugh	None	Good	Ample	Constant	No	All except four	None	Four
Holme Cultram *	Aspatria and Silloth Water Board from Overwater	None	Good	Ample	Constant	Yes (See text of Report)	Practically all the Urban part, but little of the Rural part	None	A large number
Keswick *	Springs and streams on Skiddaw	Practically none	Good	Ample at source	Normally constant, but at times intermittent at higher parts	Higher parts at times	Great majority	A good many in backyards	At Lakeside
Maryport *	River Derwent	Yes, several	Has always been satisfactory on analysis	Ample	Constant	No	All except four	None	4 wells in rural part
Millom *	Reservoir at Black Combe	Yes, from a farm near reservoir	Must be considered doubtful	Reasonable	Constant	No	All	None	None
Penrith *	Hayeswater Lake	None	Excellent	Ample	Constant	None in town but in more rural part	All except about 250 people	In a few yards	About 250 people in rural part of area
Whitehaven.	Ennerdale Lake	None	Excellent	Ample	Constant	No	3,400 houses	1,150 houses	None
Wigton	Bolton Park & Thornthwaite & Keld Springs	None	Excellent	Ample	Constant	No	All	None	None
Workington	Crummock Lake	Remote	Excellent	Ample	Constant	No	All except Findlay Place	None	About 20 houses in Findlay Place

* Are referred to in the text.

The Water Board's mains pass through Holme St. Cuthbert's area, and several houses and farms near to the pipe line have been connected up, and all charges are paid direct to the Water Board. When this is not done shallow wells are depended on.

In the Holme East Waver and the Holme Abbey areas the people are entirely dependent on a supply from shallow wells, many of which run dry in hot weather, and all of which are unsatisfactory and liable to serious contamination.

During the last five years further efforts have been made to secure a satisfactory supply, for at any rate some parts of this Urban area, and more particularly for the township of Abbey Town in the Holme Abbey parish.

No one who knows the circumstances can doubt that the present water supply from shallow wells is unsatisfactory, but great opposition has always been raised to any scheme for a better supply, because it appears that a grant received under the Agricultural Rates Act would be lost.

The area of the Holme Cultram Urban District, is, for rating purposes, divided into three parts: Part I., II., and III., under Section 211 of the Public Health Act, 1875.

In Parts I. and III. general district rates are levied, and so there is no limitation on the services which may be supplied.

In Part II. the position is very complicated. It appears that this part of the Urban area—which includes the township of Abbey Town—is "not rated for works of paving, water supply, and sewerage, or for such of these purposes as are provided for in the district" (Section 216 (2), Public Health Act, 1875); but a highway rate is levied, consequently the Agricultural Rates Acts, 1896 and 1923, apply, and a grant is made under these Acts. Whereas, if a district rate were levied to cover all services, then no grant could be claimed under these Acts.

If there were any burning desire on the part of the District Council, and this were not only an excuse to get rid of their responsibilities, to provide an efficient water supply to Part II. of their area, they could further sub-divide Part II. area under provisions of Section 211 (4) of the Public Health Act, 1875. The Council could then provide that Abbey Town and the adjoining area could be rated for the water supply, and the other portion could still continue with a separate highway rate, in respect of which an agricultural grant would be payable. In this manner the loss occasioned by the withdrawal of the grant would be very considerably diminished, and Abbey Town could be provided with a pure and wholesome water supply, which, as I have repeatedly reported, is urgently needed.

Keswick.

In some parts of this Urban area complaints of serious shortage of water have been made, although as stated in the report of the Medical Officer of Health "the quantity at its source is sufficient to supply all present needs. But for some years past, and particularly during the summer time, the service to higher parts of the area has been very intermittent owing to heavy demands on lower parts of the district."

After many meetings and a good deal of discussion a new scheme has been evolved, and now (1926) has the sanction of the Ministry.

The Medical Officer of Health (Dr. Burnett) says of the new scheme:—" It will, I believe, be thoroughly successful—one feature is a new balancing tank high up above the affected areas complained of."

Maryport.

Although up to the present no harm appears to have arisen, a water supply derived from such a river as the Derwent cannot be altogether free from suspicion. The river receives contamination from many sources, among which may be mentioned—Road surface water from the Goat Bridge at Cockermouth, just above the intake, as well as drainage from farms and hamlets along the banks, and part of the sewage untreated from the Keswick Urban District.

In the Medical Officer's (Dr. Mason) report for 1925, he says:—" The Maryport water supply is obtained by pumping—at the Goat, Cockermouth—from the mill-race taken from the River Derwent. Sand filtration takes place at Hayborough (just outside the town) and at Papcastle (near Cockermouth). Analyses in 1923 and 1924 showed that a little more efficient filtration was advisable; previously, I understand, analyses had always been good.

Being a filtered river water the supply is open to suspicion, and it behoves the Council to pay strict attention to sources of pollution of the Derwent both at the intake and along the course of the river. I have seen gross pollution of the Derwent from the Keswick Urban District Sewage Works, and this was pointed out to the Water Committee at their annual inspection. This pollution still exists. During the year a new sandwasher was purchased and installed at Hayborough, and a considerable quantity of sand has been taken out, washed and replaced, which ought to help materially towards a good analysis again. New pumping machinery is being installed at the Papcastle Pumping Station—one new engine with pump was erected during 1925, the second engine and pump is in course of erection."

Millom.

From time to time in annual reports the danger of pollution arising from the close proximity of farm buildings to the reservoir, has been drawn attention to.

In 1924 the Medical Officer of Health (Dr. Pratt) issued a special report in which he pointed out that there was serious risk of contamination of the water in the reservoir from human excreta and farmyard sewage, as well as from cattle and manured land close to the main feeders of the reservoir.

In his report for 1925, he says:—" Various Bacteriological reports on the water were obtained, which showed that the water was, in fact, polluted with sewage. During the summer of 1924 an Inspector of the Ministry of Health made an inspection of the reservoir and the farm buildings, and as a result the Ministry of Health advised the demolition of the farmstead. The Urban Council, however, decided on a less drastic measure, and the Water Manager of the Council has carried out some alterations in an effort to render more perfect the system which is intended to intercept and purify the sewage and surface water from the buildings. In spite of these alterations, I am not satisfied that all risk of pollution from this course has been removed."

In face of this report and of the analyses which show that in the past the water in the reservoir has been contaminated with human excrement, the Urban District

Council are taking upon themselves a very serious responsibility in spite of the recommendation of the Ministry of Health and their own Medical Officer. I wonder if they have ever stopped to think what might and probably would happen if a " carrier " of enteric fever became an inhabitant of the farmhouse?

Penrith.

This Urban District can obtain an excellent and abundant supply of water from Lake Hayeswater, 17 miles distant from the town of Penrith.

At the opening of the works in November, 1909, over 500,000 gallons a day could be delivered into the distributing reservoirs. But for many years past the amount of water has been gradually and steadily diminishing. The pressure in the pipes has also greatly diminished, and frequently there was a considerable amount of deposit in the water.

And as there was a grave danger—should any unforeseen contingency occur—of there being a shortage of water, the Council very wisely decided to remedy the defects in their system.

An inquiry was in consequence held in January, 1924, by the Ministry of Health, at which application was made to borrow the sum of £26,800.

At the inquiry the position was made very clear by the lucid statement of the Clerk (Mr. George Wainwright), which follows, and which deals admirably with the problems to be considered by a Sanitary Authority in providing or improving the water supply.

Clerk's Statement.

The Council's reasons for deciding to expend such a comparatively large sum in improving the system will be obvious, when the facts of the case are put before you.

There are three points which must be noted:—

(1) That the storage capacity at this end of the system is quite inadequate.

(2) That the present discharging capacity of the gravitating main from Hayeswater is diminishing at such a rate that probably in the course of five to ten years the quantity discharged into the distributing reservoirs will be insufficient to meet a day's consumption.

(3) That the only means of maintaining the present capacity of the gravitating main, and producing a quality of water that may eventually restore some of its original capacity is by chemical treatment and filtration, and in addition that it is advisable to imporve the levels of the gravitation main to secure an increased flow to the town for distribution out of the proposed new reservoir.

Point No. 1.—The present storage is 310,000 gallons in the low service reservoir, and 138,000 gallons in the high service reservoir, or a total of 448,000 gallons; and during the past year the average daily consumption has been 322,333 gallons, the maximum being 350,705 gallons and the minimum 292,634 gallons.

This leaves the town for present requirements with only 1¼ days' supply in store to meet a maximum consumption.

Such a condition is far short of safety in case of possible breakdowns along the 17 miles between the source at Hayeswater and the town. And, even neglecting breakdowns, it has on several occasions of hot summer weather, and severe winter frosts, been extremely difficult to maintain the reservoirs at anything like full capacity, so in case of actual breakdown during those periods the town might easily have less than a day's supply. This has actually happened when leaks in the gravitation main have been found.

The proposed new reservoir will hold 1,000,000 gallons and, allowing for a population up to 10,000, places the town in the position of having at least three days' reserve for distribution at 38 gallons per head per day, in addition to 100,000 gallons per day supplied to the London, Midland, and Scottish Railway Company.

The cost of the reservoir is estimated to be £6,677, and the laying of the extension of the gravitation main with the necessary distributing mains £3,748.

The site of the reservoir has been fixed with the view of establishing another zone for distribution, in order that the high service reservoir zone may be contracted, thereby reducing the quantity to be delivered at the highest point of the distributing system.

By fixing the site of the new reservoir on the Fair Hill, the level will enable the town to receive an additional

100,000 gallons a day at that point, provided, of course, the levels of the gravitation main are altered between Hayeswater and Hause Crag.

The Ministry have been asked to consent to the use of the site for water supply purposes, as it is now part of the Fair Hill enclosure, referred to in the third part of the first schedule of the 1907 Act. It is proposed to take only ¾ of an acre out of a total of 13a. 3r. 16p., leaving more than double the area (6 acres) to be reserved under the Act for recreation grounds.

Point No. 2.—As already stated, the capacity of the the gravitation main (8 inch) when laid was a delivery of over 500,000 gallons a day, now it is only about 350,000 gallons. It has been found that this diminution of capacity is caused by the growth of nodules or incrustations in the pipe.

Point No. 3.—From a report of Dr. Eric K. Rideal, of Westminster, dated the 17th instant, it appears that the water favours the growth of the iron organisms of the incrustations, and treatment of the water with chalk (perhaps a little lime) and alumina followed by filtration, is recommended for the prevention of the growth of the nodules, and probably the disintegration of the existing nodules or incrustations in the gravitation main.

Unless something is done in the direction indicated the Council are advised that within a few years the delivery of the gravitation main will not meet the daily consumption.

The installation of Mechanical Filters is estimated to cost £8,900. This part of the proposal, owing to the loss of head, necessitates the lowering of the gravitation main through Hause Crag, which will be done by tunnelling, and the laying of a duplicate 8 inch main between the lake and the Filter. By these alterations the town will secure an additional delivery of 100,000 gallons a day at the new reservoir level.

A great consideration in the installation of Filters is the desirability of taking out the vegetable matters which at present form deposits throughout the system, and especially in the distributing reservoirs. The washing out of the reservoirs and aqueduct has become of frequent necessity.

It was thought at the commencement of the work in 1909 that after a few years the submerged land containing the vegetation would be entirely disintegrated, and no trouble would be experienced from vegetable matter, but experience has not proved this. At several seasons of the year it is distinctly a cause of absolute discolouration of the water, but at all times the flowings of water into the lake within the catchment area are always bringing down into the lake quantities of vegetable matter.

The Council urge special consideration by the Ministry in regard to the period to be allowed for repayment of this Loan.

The domestic rate only produces £123 per annum, and according to loan repayment period, varying as from 30 to 60 years, the loan charges will vary from £1,644 to £1,287 per annum, and in addition an annual charge of £175 to £200 for maintenance and management of the Filters.

To increase their Water Rate and Charges an application is being made to the Ministry for a Provisional Order to amend the 1907 Act to enable the Council to apply to the Ministry for their approval to increased charges as occasion requires. The present rate of loan interest and heavy taxation have left no margin in the rates allowed by the 1907 Act.

Public notice by advertisement has been given of the intention to construct the reservoir. and in due course similar notice will be given of the intention to lay mains, etc., outside the Penrith Urban District. The necessary land and wayleaves required outside the Urban area have been arranged at agreed figures.

In conclusion, the Council beg that the Ministry will at once consent to work on the reservoir and mains in the town being commenced forthwith, as the Unemployment Grants Committee have agreed to make a grant of 50 per cent. of the interest charges on such works for a period of 15 years, subject to the works being actually commenced on the 15th February for the relief of present unemployment, and that they be completed not later than 7 months from the date of commencement.

At the time of writing the storage reservoir and Hause Crag tunnelling works are completed, and the available discharge of the gravitation main into the distributing reservoirs at Penrith is now 420,000 gallons a day. The installation of mechanical filters has been decided upon, and tenders for the execution of the work are now being invited.

None of the waters supplied to the Urban districts appear to have any plumbo-solvent action.

Water Supply.—Rural Districts.

Any statement of water supplies to Rural areas must differ very materially from that applicable to an Urban area, from the fact that almost each parish in a Rural area is a separate entity in this respect and has to be dealt with separately.

The accompanying tabular statement (see Appendix " A "), showing in a general way the water supply to each parish in each Rural area, will, I hope, give a general impression of how the Rural areas in Cumberland are situated in this respect. It is necessary, however, to supplement the table with a few general remarks.

Alston.

Considerable improvements have, within recent years, been made in the supplies to this district.

The supply to Alston itself was improved in 1924 by putting in new feed pipes and building two reservoir tanks. 320 houses are now supplied from this source.

The supply is a good one, but there is a liability to contamination from surface water.

In 1920 a new tank for Nenthead was built near the source of supply.

The water from Moss Banks for Garrigill is now filtered before delivery, and steps have been taken to prevent pollution at the source.

In 1921 Tynehead School and West Ashgill Farm had a good supply laid on.

Bootle.

The greater part of this Rural district is supplied either from public schemes as the Devoke scheme from springs on Bootle Fell, or by arrangement with the Millom Urban District, or from private schemes as at Muncaster.

Parts of Eskdale are privately supplied. Schemes for a public supply have been suggested, but have never matured.

The parishes of Birker, Corney, Ulpha, Waberthwaite, and Whitbeck are dependent on wells or mountain streams.

Brampton.

The more populous centres are adequately supplied, Brampton, Castlecarrock, Hayton, and Irthington from the mains of the Carlisle City supply.

Many of the other parishes are dependent on wells and springs, which are not free from the risk of contamination.

Carlisle.

This Rural area, which used to be very badly supplied with water, has within recent years taken effective steps to supply a large part of the area from the Carlisle City mains. Another scheme is now in progress, whereby a supply will be brought from Roughton Gill to supply the remainder of the area.

Cockermouth.

Considerably more than half the population of this area is amply supplied with good water owing to the fact that they live in the more populous areas.

For many years attention has been drawn to the inadequate and in some cases dangerous supply in many of the parishes, but so far nothing has been done.

In the annual report for 1925, the Medical Officer of Health (Dr. Mason), after giving an instructive summary of supplies to all the district, says:—" A number of districts have defective water supplies, many definitely polluted, some liable to pollution, and others inadequate (including some polluted)."

Penrith.

Apart altogether from a public health point of view, great foresight and business judgment have been shown in this large agricultural area in ensuring that practically every parish has been supplied with good wholesome water, and plenty of it.

There are, of course, a few exceptional parts of the area which have not yet got satisfactory supplies, and the Medical Officer of Health (Dr. Haswell) draws attention to these in the following words:—" There are eight townships without any water supply, viz.: Bowscale, Castlesowerby, Hutton Roof, Matterdale, Middlesceugh and Braithwaite, Mungrisedale, Mosedale, and Watermillock; but a few of the outlying houses in some cases are supplied with water from adjoining townships. Of the abovenamed, Hutton Roof, Castlesowerby, and Middlesceugh, are asking for a water supply. Part of the area is dependent on wells, nearly all of which are shallow, and, from their position, liable to contamination. As to the remainder, they are in a hilly country, where a considerable proportion of the water supply is derived from springs which are good, but at considerable distances; the other houses are supplied by shallow wells or river water, and both are liable to contamination. In these cases it is hardly likely that a piped supply will be obtained, and in some from the small and scattered population the expense will put the matter aside."

Whitehaven.

This Rural district is exceptionally well supplied with water, ample in quantity and of good quality, from various sources. The area is exceptionally favourably placed in this respect, as it has within its area several Urban areas, from the supply of which it can draw for many of its more populous districts.

The outstanding feature in the area as regards water has been the replacing of the most unsatisfactory supply to Distington from Crummock Lake through arrangement with the Workington Corporation, by an ample and good supply from Owsen Fell, in conjunction with the Harrington Urban district.

Wigton.

The water supply to this area, which has for so long been a blot on the sanitary administration in Cumberland, is at last showing definite signs of a satisfactory solution.

Dr. Briggs, the Medical Officer of Health, who for over 30 years has worked so indefatigably to obtain an efficient water supply for his area, ventures, in his report for 1925, to hope that it is now " nearing its solution after many years of waiting."

Dr. Briggs, in his Annual Report for 1925, says:—

"The problem of a Water Supply for the greater part of our district has been very difficult, but is, I venture to hope, nearing its solution after many years of waiting.

The villages in our Southern area lying in the valleys which cross, naturally, the fells, have each a gravitation supply, the gathering ground being from fell springs to a service reservoir, and laid on into the houses or to stand pipes, chiefly the latter. In the village of Uldale there is a stand-pipe in the centre of the village, 150 yards from the furthest off house. The School and Vicarage, however, are deprived of this source of supply, being at too high a level.

The following villages are supplied from gravitation schemes of this kind. The yield is ample and constant:—Hesket-new-Market, Caldbeck, Brocklebank, Torpenhow, Ireby, Uldale.

The South-Western part of the district—Fletchertown and Mealsgate, Allonby, Hayton, Westnewton, and fifteen houses between Ireby and Mealsgate derive their supply from the mains of the Aspatria and Silloth Joint Water Board.

This is a chemically pure water of 4° hardness, and the supply is constant. The Hamlet of Howrigg, near the Village of Westnewton, and three farms at Crossrigg, are without any reliable supply.

The Main at Mealsgate is tapped to supply Bolton Low Houses, Brough Hill and Bolton New Houses, and Waver Bridge Cottages.

The Northern part of the district is flat, and slopes towards the Solway Firth, and the villages here till the present year have depended for their supply on shallow wells liable to pollution, and in the dry seasons to insufficiency of supply.

A new scheme for supplying this district was completed during the year, and will supply four-fifths of Bowness-on-Solway, a small part of Aikton ,and almost the whole of Kirkbampton and Kirkbride. The supply is from the Carlisle Corporation main, and is constant and of good quality.

From the Inspector's Report it will be seen that 14 of our 25 Parishes have now a gravitation supply to all or part of the Parishes. The supply to the 10 Parishes from the Main of the Silloth and Aspatria Water Board has been well maintained throughout the year.

The supply of the Villages of Prospect and Ireby has been greatly improved during the five years, and the intermittency put an end to. The remainder of our area, viz., the Eastern and Western Parishes, which depend on wells of doubtful purity and irregular supply. These are under consideration at present, and the Council have two schemes in hand which will ensure a gravitation supply to both.

The Western Parishes are Waverton, Bromfield, Langrigg, Blencogo, and Dundraw.

The source of supply proposed for these is the Well Rash Spring, on the North side of Catlands Hill, near Bolton Gate.

The Eastern Parishes are:—Aikton, Thursby, Westward, Oulton, Woodside, and Sebergham.

The source of supply proposed for this area is the Southwaite Springs, on Faulds Brow Fell, near Caldbeck. The yield from both sources is ample, and the analysis of the County Analyst satisfactory.

According to the arrangements of the moment, these schemes will be entered upon during 1926. If reference be made to the Inspector's Report, details of the present gravitation water schemes will be seen."

The provision of an ample and wholesome supply of water is one of the first essentials for the maintenance of health in any community.

What constitutes an ample supply?

Roughly, about 15 gallons per head a day are required for domestic purposes, and about 5 gallons more for flushing drains and sewers. In towns, for trade and public purposes, about 10 gallons more.

In addition to the necessity for an ample and pure water supply to the whole community, which has been written about almost ad nauseam but in many instances, I regret to say, without effect, there are two other cogent reasons, which have been brought out by recent legislation, why it is necessary to provide an abundant and good water supply.

Under Section 6 of the Public Health (Water) Act, 1878, every house erected after March 25th, 1879, must have a sufficient and wholesome supply of water for consumption and for domestic purposes, and the house cannot be occupied until a certificate to that effect is given by the Sanitary Authority on the report of its Medical Officer of Health or its Sanitary Inspector. In the past I am afraid this Section has been honoured more in the breach than the observance, because so comparatively few houses were built; but now that housing schemes are becoming so common, and in some areas houses are being built almost wholesale, Local Authorities will have no justification for any neglect in this direction.

Again, under the Milk and Dairies Order, 1926, which comes into force on the 1st October, 1926, it is clear that if a Local Authority is to carry out the requirements of this Order, a pure and ample water supply is a prime necessity.

This Milk and Dairies Order provides, inter alia, that:—

(a) No person shall carry on the trade of cowkeeper or dairyman, or use any premises as a dairy unless he and any such premises are registered. (Article 6 (3).)

(b) All registered premises shall be provided with a supply of water suitable and sufficient for the requirements of this Order. (Article 13 (1).)

But this Article shall not apply to any building in use as a cowshed or dairy on the 1st October, 1926, until a period of eighteen months has elapsed after the service of a notice by the Sanitary Authority drawing the attention of the occupier thereto.

(c) The water supply used for the watering of cows shall, as far as reasonably possible, be protected against contamination caused by the drainage of foul water. (Article 13 (3).)

(d) Every cowkeeper or dairyman shall cause all vessels (including the lids of such vessels) and appliances used or intended to be used by him for containing, measuring, or stirring milk, or for any other purpose for which they may be brought into contact with milk, to be kept at all times in a state of thorough cleanliness. (Article 21.)

It is quite obvious that no cowkeeper or dairyman can possibly comply with the requirements of this Order with such water supplies as exist in many parts of some of the Rural districts in this County.

Rivers and Streams.

Although with a few exceptions noted elsewhere the grosser forms of pollution, e.g., sewage and industrial effluents, have been greatly diminished in the past five years, minor forms, such as farmyard drainage, sheep dipping, slop water drainage, and so on, still continue in most of the Rural areas.

The most notable improvements in this respect have been the installation of modern sewage disposal works for Cleator Moor and Cockermouth Urban districts, which has prevented crude sewage entering the rivers Ehen and Derwent respectively, and in the Longtown Rural district in 1921 the discharge of all sewage into settling tanks before final discharge into the River Esk.

Drainage and Sewerage.

In the matter of drainage and sewerage marked improvements have taken place during the past five years in some of the sanitary districts, and in others schemes are either in process of being carried out or are under consideration.

The position at the end of 1925 in the Urban Districts is as follows:—

Arlecdon and Frizington.

The method of disposal is by means of settling tanks and land irrigation. Attention has been drawn to the unsuitability of the irrigation land, and insufficiency of the settling tanks, which ought to be double the size, and filter beds ought to be put in; this applies both to Arlecdon Park Road and Rowrah Colliergate. At the latter the tanks are at too low a level, and in addition to being enlarged should be higher in the field so as to make more land available here where it is more suitable for irrigation.

Aspatria.

A modern system of bacterial disposal, which works perfectly.

Cleator Moor.

In this area, which used to discharge all its sewage untreated into the River Ehen, marked improvements have taken place.

During 1921-24 over three miles of collecting and outfall sewers were laid. Now the sewers are adequate if the amount of surface water entering them could be reduced.

Two modern outfall works for the whole district were provided in 1921-24.

Cockermouth.

Many of the sewers in this area were in very bad condition, and the sewage was discharged into the River Derwent practically untreated.

Now many of the sewers have been relaid, and a modern bacteriological method of disposal has been installed, giving a satisfactory effluent into the river.

Egremont.

The method of disposal now in operation is by broad irrigation, but as this has proved unsatisfactory a scheme for carrying the sewage to sea has been under consideration, and at the time of writing, I believe, has received the sanction of the Ministry.

Harrington.

All the district is sufficiently drained. The sewage of Harrington itself is carried out to sea, but at Lowca is run into settling tanks, and if this part of the district develops will be carried out to sea.

Holme Cultram.

The only parts efficiently drained are Silloth and Skinburness, where the sewage is run into the sea. An extension of the scheme to comprise West Silloth has been under consideration, as well as a reconstruction of the sewer outfalls to the sea.

Keswick.

The method of disposal is by septic tanks and constant filtration. The method is effective, but there are not sufficient filters to deal, at all times, with the whole of the sewage. At times part of the sewage has to be run untreated into the river.

Maryport.

Discharges the whole of its sewage into the sea.

Millom.

The whole of the sewage is discharged into the sea, but owing to inherent difficulties of a sandy estuary the effluent is above low water mark.

Penrith.

An efficient system of land irrigation, with effluent into river.

Whitehaven.

Discharge to sea.

Wigton.

In this area the old inefficient system of irrigation has been abandoned, and the whole of the sewage, after screening, is carried to the sea.

Workington.

Generally speaking, the town is provided with a sufficient drainage and sewerage system. There are, however, two areas which are liable to flood when excessive rainfall occurs, together with a high tide.

The sewage is discharged untreated into the sea by six main outlets.

When the alterations and improvements which are under consideration are effected most of the Urban districts will have satisfactory methods of sewage disposal, but improvements are required in Arlecdon and Frizington, Holme Cultram, and Keswick.

As regards Drainage and Sewerage in Rural districts this is dealt (along with Water Supply and Refuse Disposal) with in the tabular statement in Appendix A. A short statement will be found on these services for each parish in each Rural district.

From the nature of things drainage and sewerage is a different problem in Rural areas to what it is in Urban centres.

In many parishes in some of our Rural districts sanitation as regards sewerage and drainage is in the same primitive condition as it has always been; and as many houses are very old, the sanitary arrangements are equally antiquated or even non-existent.

Of what does Sewage consist?

Without going into details (which is unnecessary) of its chemical composition it may be said to consist of water containing certain waste substances, both in suspension and in solution, consisting of human and animal excrement; waste water from the house, containing soap, grease, etc., from personal, family, and general house washing.

It is generally supposed that so long as human excrement is excluded from the drains and sewers, the sewage is practically harmless and inoffensive, but this is certainly not the case.

Estimates have been made of the manurial value of sewage from water closet towns and from towns where the human excrement is dealt with by the midden or pail systems, and there is very little difference between the two.

In the first report of the Rivers' Pollution Commissioners it was shown that the value, for manurial purposes, of 12 tons of sewage from towns without water closets was equal to 10 tons of sewage from towns with water closets.

Ordinary fresh sewage is comparatively inoffensive, but when allowed to stand for any length of time putrefaction sets in and a nuisance is created. Putrefaction is caused by the action of minute living organisms or bacteria—always present in sewage and air—upon dead organic matter. When sewage, either liquid or solid, is allowed to stand these organisms multiply with enormous rapidity, until in time the sewage is entirely got rid of, but in the process the discharge of particles of foul organic matter and gases takes place into the air, which in many cases cannot be neutralised by the oxygen in the air. Thus it is that whilst it cannot be said that foul gases are the direct cause of disease, more particularly infectious disease, the persons habitually living in such an atmosphere are undoubtedly more susceptible to disease, infectious as well as non-infections, than persons living in a pure and clean atmosphere.

It is obvious, then, that in order to prevent this fouling of the atmosphere with its unpleasantness and evil effects on health, removal of all decomposible organic matter from the vicinity of houses must be our aim, and upon the most complete and quickest removal must depend the verdict whether the system is a satisfactory one or not.

What possible justification can a Sanitary Authority have for saying that their methods are satisfactory when huge midden privies, emptied "when they are full" or possibly once in six months, without any roofs, open to the weather, open to prowling cats, and absolutely inviting flies to come in and breed in them and then to convey the foulest matters to the adjacent houses and to children's food, are still in existence?

The one and constant excuse is cost, but on the other hand we have to consider the cost of the present system. Cost in working efficiency, cost in sickness and constant ill-health, and the cost in the unnecessary sacrifice of life, as well as the cost in the preventable expense thrown on Local Education Authorities in having to treat so many children who are in ill-health owing to the insanitary surroundings in which they live.

I have attempted to give some idea of the drainage and sewerage in each parish in each Rural district in the tabular statement appended. (See Appendix A.)

Closet Accommodation.

In Urban Districts, the accompanying table shows approximately the number of W.C.'s, Privies, and Earth Closets, whether the conversion of unsatisfactory closets into water closets is being carried out under any definite policy, as well as the number of such conversions carried out during the past five years.

Closet Accommodation in Urban Districts.

	Number of W.C's.	Number of Privies.	Earth Closets.	Is the Conversion of Unsatisfactory Closets to W.C's. being done under any Definite Policy.	Number of Conversions during the past 5 years.
Arlecdon and Frizington	1015	85	—	No	5
Aspatria	708	—	20	The only earth closets are in isolated houses not within reach of sewers	
Cleator Moor	1750	20	—	Privies are at outlying houses or attached to houses not worth the expenditure of conversion	3
Cockermouth	Practically all	5	—	Several instances of 3, 4 or more houses to one W.C. Progress in increasing the number of W.C.'s is slow	2
Egremont	1488	3	Pail 6	No	14
Harrington	820	6	17	No	11
Holme Cultram	No return				
Keswick	All except at High and Low Briery, Forge and Brow Top pail closets. At Cuddybank 2 privies				
Maryport	1663	13	—	No The Privies are in the rural part of the area and cannot be connected to sewers	None
Millom	1900	30	—	No	None
Penrith	2024	16	4	Each case has been considered	12
Whitehaven	4600	14	0	Yes	10
Wigton	300 (about)	7		No accurate record available	2
Workington	All W.C.'s except in Seaton Ward, where 82% are W.C.'s				141

As will be seen, the Urban Districts are in a satisfactory condition in this respect, with the exception of Arlecdon and Frizington, which still has far too large a number of privies.

In the Holme Cultram Urban Area the really Urban parts of it are satisfactory, but a large part of the area is really Rural in type.

In Cockermouth, although practically all the accommodation is Water Closets, cases have been reported in which there are two, three, or more families using one Water Closet. Such a state of affairs should not be allowed to exist.

In Rural Districts the various parishes are deal with in the table (see Appendix A). In many of the larger villages the conversion of midden privies to water closets has gone on very satisfactorily, but in some areas nothing at all has been done, and no attempt has been made to improve the hopelessly insanitary conditions in many of the villages.

In Rural as in Urban areas there are three methods of providing closet accommodation—(a) Water Closets, (b) Pail Closets, (c) Privy Middens.

(a) The great and only objection that can be brought against water closets is the initial cost of laying the drains and sewers necessary for their proper use, but where a house is supplied with a satisfactory water supply, I very much doubt if it would not be cheaper to put in an effective drainage system.

But it may be argued if you have a water-carriage system you must have a method of disposal of the sewage. So you must, but it need not be an expensive or an elaborate affair. There are at the present time some very efficient sewage disposal plants, specially devised for small communities or even single houses, which can be installed at comparatively small cost, and which are very efficient, give no trouble, and require very little looking after.

I wonder if I am too optimistic in hoping that one or other of these methods will, before many more years go over our heads, come into being in every village throughou the County?

2. Then we have the Pail System, which is as great an advance on the old abominable midden privy as the water carriage (water closet) is on the pail system.

But the success of this system at the present time depends for its efficiency too much on individual effort and attention, and the "sanitary conscience" is not aroused sufficiently in the majority of the general public to make it a satisfactory method.

For a single house, occupied by one family, where the whole family has been taught from earliest childhood how a pail closet should be used and kept, it is satisfactory, provided further that it is constructed on a satisfactory plan.

The majority of pail closets to be seen in the villages to-day are little, if any, better than midden privies. Most of them are certainly just as evil-smelling, and so long as the emptying and cleansing of the pails is left in the hands of the tenants, I can see no hope of improvement for many years to come.

This, in my opinion, is work which ought to, and quite well could, be done by the Sanitary Authority of the district; but about this I will have more to say when dealing with the subject of Scavenging.

3. There is no justification whatever for a Sanitary Authority allowing midden privies in any part of its area.

In one of his earliest reports to the Local Government Board, Sir John Simon wrote:—

"There are houses, there are groups of houses, there are whole villages, there are considerable sections of towns, there are even entire and not small towns, where general slovenliness in everything which relates to the removal of refuse matter, slovenliness which in very many cases amounts to utter bestiality of neglect, is the local habit, where just outside each house or in spaces common to many houses lies for an indefinite time undergoing fœtid decomposition more or less of the putrefiable refuse which house life produces, excrement of man and brute. . . . . sometimes held in receptacles specially provided to favour accumulation, such as privy pits and cesspools."

Such conditions are to be seen in some of the towns and villages in this County to-day.

Scavenging.

Section 36 of the Public Health Act, 1875, reads:—If a house within the district of a Local Authority appears to such Authority by the report of their Surveyor, or Inspector of Nuisances, to be without a sufficient water closet . . . and an ashpit furnished with proper doors and coverings the Local Authority shall by written notice require the owners or occupiers of the house within a reasonable time therein specified, to provide . . . . and an ashpit, furnished as aforesaid.

Section 42, Public Health Act, 1875, reads:—Every Local Authority may and when required by the Local Government Board shall themselves undertake or contract for the removal of house refuse from premises, the cleansing of earth closets, ashpits, and cesspools, either for the whole or any part of their district.

Section 11, Public Health Act (Amendment) Act, 1890, reads:—The expression ashpit in the Public Health Act and in this Act shall for the purpose of the execution of these Acts and of this Act include any ashtub or other receptacle for the deposit of ashes, fœcal matter, or refuse.

Scavenging in the ordinary acceptance of the term means the removal of household refuse, cleansing and watering of streets, etc.

SCAVENGING.

Urban Districts.	Removal and Disposal of House Refuse.	Arrangements for :— Cleansing of Earth Closets, Privies, Ashpits, &c.	Sustituting Sanitary Ashbins for Unsatisfactory Substitutes.	
			Any made?	No. of Substitutions.
Arlecdon and Frizington	Twice weekly. Deposited in holes or on land	Twice weekly by Council's men	No	None
Aspatria	To tips by Council's men	None	No, but required	None
Cleator Moor	Collected daily	Cleansed weekly	No	None
Cockermouth	Covered cart to tip	None	No	None
Egremont	Daily	Pails weekly. Privies and ashpits alternate weeks	No	None
Harrington	Contract. Twice weekly	By tenants	No	None
Holme Cultram				
Keswick	Bi-weekly to tip	By Council	Practically all substituted	
Maryport	Daily	Some by Council; some privately	No data available, but the numbers are increasing	
Millom	Fixed receptacles or ash-pits	By Council's men	No	None
Penrith	Weekly to tip	On application by Council's men	Has been under consideration	Only a few
Whitehaven	Most daily. Taken out to sea	—	Yes, property owners	700
Wigton	Carted to tip	—	No	12
Workington	Daily to tips	Weekly or bi-weekly	No	None

In towns in which the water carriage system is universal, the matter is comparatively simple, but in small towns and Rural districts where there are many earth or pail closets and midden privies the question becomes a very difficult one, and one, moreover, which cannot satisfactorily be dealt with by the owner or occupier of the house, but should be dealt with by the Sanitary Authority.

There is a general consensus of opinion amongst Medical Officers of Health and Sanitary Inspectors that all fixed receptacles for containing refuse should be abolished, and movable, water tight, lidded receptacles, easily emptied, and not too big, should be substituted. There are now many satisfactory ones on the market at the present time, and Sanitary Authorities have power to supply these sanitary ashbins, if they think fit. (P.H.A., 1875, Sec. 39.)

If, however, they are, for any reason, unable or unwilling to supply the ashbins, they could save owners and tenants considerable cost by buying ashbins wholesale and retailing them to owners at cost price.

In Rural areas scavenging is more complicated by the fact that the distances between village and village or small groups of houses is, in many cases, great, but when it is remembered that in addition to house refuse proper scavenging in Rural areas must include the emptying and cleansing of pail closets, large middens as well as midden privies, the importance of the proper carrying out of this work becomes more evident.

In some of the Rural areas scavenging has been, in recent years, undertaken by the Council, either by their own men or under contract, and the improvement in the villages is marked; but as will be seen from the table (see Appendix A) scavenging in many Rural parishes is non-existent, and the emptying of all receptacles is left to the occupier or owner, which means that in the vast majority of cases it is only done when want of space for the accumulation of any more filth compels the emptying of the receptacles.

Whether the work is done by the Council direct or by contract, or whether by the tenant, householders can help enormously to minimise the work if they will only realise that nearly half the household refuse can, and should be, burnt in the kitchen fire at the end of each day.

In addition to minimising labour by burning all the combustible refuse householders should be taught to realise that garbage in the form of tea-leaves, cabbage-leaves, potato and turnip peelings, etc., by keeping the contents of ashbins constantly moist and warm favour putrefaction and the breeding of flies. It might do some good if every Sanitary Authority issued from time to time short printed instructions to householders pointing out how to prevent ashbins becoming the intolerable nuisance they often are, as well as the proper way of disposing of garbage, etc.

The Rural resident in this County of Cumberland is not the man or woman as regards the standard of health which he or she ought to be; the Rural child is not the child he or she ought to be, as is shown by the records of the medical inspection of school children.

It is all nonsense to say that this is due to the best of the Rural population moving into the larger Urban centres. In my opinion it is due to the grossly insanitary conditions in which a large section of the Rural population is compelled to live.

In my inspections of Rural villages I have often been greatly impressed, not by the indifference of the people to their surroundings, for they realise and resent having to live under such conditions, but by the fact that they appear to think that because they and their parents were born and brought up under such conditions nothing can be done to improve them.

I feel sure that there are many members of Sanitary Authorities who do not realise the conditions under which many Rural families have to live. No water supply laid on to the house, all the water for all purposes has to be obtained from wells, and is often polluted when obtained, and carried, in many cases, a considerable distance. No sanitary conveniences in the house, only a pail closet or midden privy at the far end of the garden, or even worse, in close proximity to the house. No means of getting rid of slop water unless to empty it over a gully somewhere in the neighbourhood of the backdoor, or into a roadside gutter, or into a gutter running down the main street of the village. And, in addition, an ashtip, generally swarming with rats, in close proximity to houses, in short, with all the conditions present which are favourable to breed and spread ill-health and disease.

HOUSING STATISTICS FOR THE YEAR 1925.

	WORKINGTON	WHITEHAVEN	ARLECDON & FRIZINGTON	ASPATRIA	CLEATOR MOOR	COCKERMOUTH	EGREMONT	HARRINGTON	HOLME CULTRAM	KESWICK	MARYPORT	MILLOM	PENRITH	WIGTON	TOTAL URBAN AREAS	ALSTON	BOOTLE	BRAMPTON	CARLISLE	COCKERMOUTH	LONGTOWN	PENRITH	WHITEHAVEN	WIGTON	TOTAL RURAL AREAS	GRAND TOTAL
No. of new houses erected during the year:—																										
(a) Total, including Nos. given separately under (b)	10	104	1	—	—	5	6	8	13	42	4	—	48	2	243	3	7	17	10	38	15	5	6	1	102	345
(b) With State assistance under the Housing Acts:																										
(i) By the Local Authority	10	50	—	—	—	—	—	—	—	10	—	—	40	—	110	—	—	—	—	12	—	—	—	—	12	122
(ii) By other bodies or persons	—	52	1	—	—	5	6	8	9	9	—	—	8	2	100	—	—	17	10	9	15	—	5	—	56	156
1. UNFIT DWELLING-HOUSES.																										
Inspection—(1) Total No. of dwelling-houses inspected for housing defects (under Public Health or Housing Acts)	383	364	973	635	206	137	71	129	45	140	319	281	182	147	4012	—	273	60	146	102	602	799	369	600	2951	6963
(2) No. of dwelling-houses which were inspected and recorded under the Housing (Inspection of District) Regulations, 1910, or the Housing Consolidated Regulations, 1925	97	31	141	465	101	58	71	23	37	48	72	281	140	—	1565	—	68	—	—	57	—	275	288	—	688	2253
(3) No. of dwelling-houses found to be in a state so dangerous or injurious to health as to be unfit for human habitation	—	31	1	15	8	1	13	—	—	1	—	2	42	89	203	18	1	1	—	18	—	18	--	6	62	265
(4) No. of dwelling-houses (exclusive of those referred to under the preceding sub-head) found not to be in all respects reasonably fit for human habitation	89	259	140	58	146	350*	13	125	5	43	185	67	173	34	1687	15	140	20	—	37	453	102	260	140	1167	2854
2. REMEDY OF DEFECTS WITHOUT SERVICE OF FORMAL NOTICES.																										
No. of defective dwelling-houses rendered fit in consequence of informal action by the Local Authority or their Officers	286	180	118	27	59	43	7	120	—	27	233	13	149	7	1269	5	147	12	102	4	74	93	203	16	656	1925
3. ACTION UNDER STATUTORY POWERS.																										
A.—Proceedings under Section 3 of the Housing Act, 1925.																										
(1) No. of dwelling-houses in respect of which notices were served requiring repairs	6	4	141	—	—	—	—	3	5	43	—	32	10	—	244	—	3	4	—	19	—	18	1	5	50	294
(2) No. of dwelling-houses which were rendered fit after service of formal notices:—																										
(a) By owners	—	4	118	—	—	—	—	3	5	29	—	32	7	—	198	—	3	1	—	8	—	—	—	3	15	213
(b) By Local Authority in default of owners	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	1
(3) No. of dwelling-houses in respect of which Closing Orders became operative in pursuance of declarations by owners of intention to close	—	—	—	—	—	—	1	—	—	2	—	—	5	—	8	—	—	—	—	1	—	7	—	—	8	16
B.—Proceedings under Public Health Acts:—																										
(1) No. of dwelling-houses in respect of which notices were served requiring defects to be remedied	1204	1	141	—	45	19	3	2	2	71	12	32	—	—	1532	—	9	—	62	40	271	157	—	—	539	2071
(2) No. of dwelling-houses in which defects were remedied after service of formal notices:—																										
(a) By owners	1185	1	141	—	24	12	3	2	2	19	12	32	—	—	1433	—	9	—	51	15	54	149	—	—	278	1711
(b) By Local Authority in default of owners	3	—	—	—	—	—	3	—	—	—	—	—	—	—	6	—	—	—	—	—	—	—	—	—	—	6
C.—Proceedings under Sections 11, 14 and 15 of the Housing Act, 1925.																										
(1) No. of representations made with a view to the making of Closing Orders	—	31	1	—	8	—	—	—	—	1	—	2	—	—	43	—	1	1	—	18	—	—	--	2	22	65
(2) No. of dwelling-houses in respect of which Closing Orders were made	—	30	1	—	8	—	—	—	—	1	—	2	—	—	42	—	—	1	—	18	—	—	—	3	22	64
(3) No. of dwelling-houses in respect of which Closing Orders were determined, the dwelling-houses having been rendered fit	—	—	—	—	1	—	1	—	—	—	1	—	—	—	3	—	—	—	—	—	—	—	—	—	—	3
(4) No. of dwelling-houses in respect of which Demolition Orders were made	—	13	—	—	5	—	—	—	—	—	—	—	—	—	18	—	—	—	—	—	—	—	—	1	1	19
(5) No. of dwelling-houses demolished in pursuance of Demolition Orders	—	3	—	—	4	—	—	—	—	—	—	—	—	—	7	—	—	—	—	—	—	—	--	2	2	9

* Approximate.

I feel sure that the sanitary conditions of the Rural parishes could, without very great expense, be greatly improved if Rural District Councils would seriously consider and deal with the scavenging of the various parishes. And I suggest for the consideration of these Councils the provision of motor scavenging waggons to collect all the refuse periodically and at short intervals, and to remove the refuse after collection to tips further away from inhabited centres. Two or more Sanitary Authorities might well combine for carrying out such work.

Housing.

Housing statistics for each sanitary area for the year 1925 will be found in an accompanying table.

As will be seen from the short extracts which follow from the reports of Medical Officers of Health a considerable number of new houses, amounting in the aggregate to over 1,200, have been or are in process of being built under housing schemes of the various Local Authorities in the past five years. Although the building of this number of houses must have done something towards diminishing overcrowding, much remains yet to be done, and more especially so is this the case in the larger centres of population, where, in addition to overcrowding of houses, overcrowding of an area has to be contended with.

In no area does this part of the housing problem appear to have been approached.

Ten years ago, in my annual report for 1916, I made suggestions for dealing with this part of the problem, and I am repeating these suggestions now, because the need for improvements is scarcely less now than it was then.

It will not be enough to say 25, 50, or 100 new houses are required to house our surplus population, and to ignore altogether that part of the population, which is living in houses unfit for habitation, some by reason of structural defects, some as a result of their age and dilapidation, and others due to carelessness and neglect of the tenants themselves.

In most purely Rural districts, especially farms, where better and more housing accommodation is required for married couples with families, the difficulty could be met by providing a few new cottages. Personally, I cannot see why wooden cottages should not be allowed.

After the war a number of excellent wooden erections could be obtained at a reasonable price, made into comfortable cottages, and with reasonable care would last for not less than 40 years.

With regard to the more populous parts of Rural districts (and some of the smaller Urban districts) such as many of our villages, more especially pit villages, the mere building of a few additional houses will not meet the existing needs.

In those it will be necessary to embark on a more ambitious scheme under Part II. of the Housing Acts, condemn all houses which in the opinion of the Medical Officer of Health are unfit for human habitation, either reconstruct or demolish these, deal with all obstructive buildings, or schedule an area, and make it the subject of a reconstruction scheme. In Urban districts the same principle should apply, except that in the larger towns it would be necessary to formulate an improvement scheme or schemes under Part I. of the Housing Acts, and to deal with single buildings and obstructive buildings under Part II.

If any permanent good is to be done Local Authorities must make up their minds not to do the least they can to satisfy the outcry, but to do all that is necessary to ensure the health and welfare of the people.

They should have clearly in mind a definite and complete scheme which will cost a certain sum; a part of their complete scheme, costing so much, should be carried out each year until the whole was complete

There are difficulties, very serious difficulties, to be met, and probably there are few who have given this matter of housing serious consideration, who fail to recognise how many and great the difficulties are; but they must be overcome and can be overcome, if the question is tackled seriously and systematically.

With regard to the class of house to be built, this is a question of cost and of the requirements of the district.

Ideal housing is on of the lines of a garden city, semi-detached villas, with a small garden for each; but this is not feasible in many Urban districts, and more particularly in the central parts, the very parts where such a system is most required for health purposes.

Much, however, I believe, could be done on garden city lines by building flats for the working classes.

By flats I do not mean whole solid streets of 3, 4, 5, or 6-storied dwellings. This would only make matters worse. I mean flats not more than three stories high, which may for the sake of a better name be called "Garden City Flats," that is to say a block of flats and an open space alternating. On the opposite side of the street the flats could be built opposite the open space, so that the front of every block of flats faced an open space, and the whole of every block was surrounded by open space. The open spaces could be utilised as gardens, allotment grounds or playgrounds for children.

Some such method as this would be most applicable to districts where it is necessary to build a large number of houses on a limited area of land to enable working men to live within reasonable distance of their work, or in districts where an improvement or a reconstruction scheme is contemplated.

After an improvement or reconstruction scheme has been carried out on ordinary lines little more than half the previous population can be housed in the improved or reconstructed area, and many other districts of the same or an adjoining area consequently suffer from serious overcrowding.

By means of the flat system double or even three times the number of houses can be built on any given site without overcrowding the area, but on the contrary supplying the maximum amount of space, fresh air, and light for each house.

There would be advantages in this system, not the least of which would be economy—economy in building, in drainage, and in streetage.

Economy in fuel would be effected by providing central heating, and with this there would be a more reasonable prospect of securing efficient ventilation of each individual house and each room in the house, because one of the main reasons why people do not open their windows is that they cannot afford to use sufficient fuel to keep the rooms comfortably warm when suitably ventilated.

Further economies could be effected, but for the carrying out of these reliance would have to be placed on the tenants themselves, and this might be one of the difficulties. Such are communal restaurants, laundries, baths, and recreation rooms.

It is not going too far to say that good housing conditions would have a marked effect in lessening intemperance. I do not attempt to deny that bad housing and all it connotes is often due to intemperance, but intemperance is more often due to bad housing. Give the average working man a decent house to live in, give him some opportunity to spend profitably and healthily his spare time, and there will be no more intemperance in his section of the community than in others.

These are the main broad advantages which I see in some such scheme of housing. Doubtless there are others which can be brought forward on more mature consideration, and by others who are probably better able than I am to develop such a scheme.

Is it too optimistic to hope if and when such flats are built that in connection with them there should be a small maternity hospital, possibly a small isolation hospital, where the first cases of doubtful diseases could be isolated; and Nursery Schools on open-air principles, which would be infinitely better close to the infants' own houses, than at a distance.

In Rural, and more particularly Agricultural areas, the problem is not quite the same. Here as a rule, except in some village, there is no overcrowding an area, and in not many of the Rural areas of this County is there any acute shortage in the number of houses. The main matter to contend with is the dilapidated general condition, the unsatisfactory ventilation, the darkness owing to the smallness of the window space, and the dampness of many if not most of the cottages owing to their age.

In many cases the owners cannot afford to have the necessary repairs effected owing to the small rents paid, and rather than spend money on poor property they will allow the cottages to go to ruin. Many such ruins are to be seen in the countryside, ruins with walls many of them built of stone—infinitely better walls than are built at the present time. It is obvious that to renew these cottages to bring them up-to-date in lighting, in ventilation, and other sanitary and domestic requirements, would be an infinitely better financial proposition than building new cottages.

It is for this purpose that the Housing (Rural Workers) Bill has been introduced. This is a Bill to promote the provision of housing accommodation for agricultural workers and for persons whose economic condition is substantially the same as that of such workers, and the improvement of such accommodation by authorising County Councils to give financial assistance towards the reconstruction and improvement of houses and other buildings.

Assistance under the Bill may be given either by way of grant or by way of loan, or partly in each manner, and it is provided that the Ministry shall, subject to such conditions as may be determined, make or undertake to make contributions towards any expenses incurred by Local Authorities in making grants.

The idea outlined in the Bill has, I think, three great advantages:—

1. That the walls being already in existence, the housing problem will be much more speedily solved in the country than in the towns.

2. The cost to the State will be much less than if entirely new houses were to be built; and

3. That one of the great causes of migration—the unsuitability of many Rural houses—from Rural to Urban districts will speedily be removed.

It is suggested that no grant will be made in respect of any property which is not to be occupied by Rural workers, and rents are not to be raised by more than 3 per cent. of the landlord's contribution to the cost of reconstructing his property.

It is obvious that if this Bill becomes an Act it will at the minimum of cost solve the housing problem in agricultural rural areas, and will do away with the objection that private property is being wholly improved at the public expense.

The following extracts are taken from the reports of the District Medical Officers of Health:—

Arlecdon and Frizington.—"There has been little change during the last five years. 11 new houses have been built, and one house closed. Many houses are still in a bad state of repair, but industrial depression and its attendant difficulties precludes any drastic action by the Council."

Aspatria.—" 60 houses were built by the Council during 1922 and 1923. Speaking generally, the majority of the working classes are well housed. 46 back-to-back houses, but they are not of a very bad type, and there is not much overcrowding."

Cleator Moor.—" At the time of the Census in 1921 there was a shortage of 68 houses. Since then 40 new houses have been built, 39 of them being bungalows, while 9 more houses have been provided by the conversion of other buildings into dwelling-houses. 21 uninhabited houses have been closed and demolished. It would appear that there is still a shortage of 40 houses . . . there is a considerable amount of house property of poor standard in the district."

Cockermouth.—" The general housing conditions cannot be said to be satisfactory. There is a large number of houses without through ventilation. 246 two or three-roomed cottages and 96 back-to-back houses existed in 1919, and practically no alteration has occurred since then. In that same year 46 houses were considered to be unfit for habitation, and since then half-a-dozen houses have been closed, and 26 houses have been erected. Towards the close of the current year (1925) the Council decided to erect 24 houses on The Moor. A number of instances of overcrowding is known to exist."

Egremont.—" The conditions are good generally. There is not a great shortage of houses. The housing scheme at Castle Croft has been undertaken to meet the former overcrowding."

Harrington.—" The general housing conditions are very fair. In Harrington itself there is not a serious shortage of houses, but what one would like, would be to see new property built to replace some that needs demolition. In Lowca there is an undoubted shortage of houses. This will, to a great extent, be relieved when the 50 new houses now in course of erection there are completed."

Keswick.—" It is disappointing to find that in spite of all the new houses which have been erected, both by the Council and by private enterprise, such a comparatively small proportion of people living in insanitary houses have been displaced, and that overcrowding still exists."

Maryport.—" Shortage of houses still exists, though the position is not so serious as it was five years ago. In the period 1921-25, 83 houses were built, 4 of which were built during 1925. Overcrowding is still to be found in a number of houses. The general standard of housing is fair. There are still, however, over 300 back-to-back houses occupied."

Millom.—" General housing conditions, for a mining area, are good. There are not many cases of overcrowding, and where it has occurred it has appeared to be rather from choice than from inability to find alternative accommodation. While there are several houses in the district whose condition is unsatisfactory, the general standard of fitness in the area is good."

Penrith.—" It was decided in 1919 that 111 new houses were needed to deal with the situation caused by the advance of ideas of necessary accommodation and the cessation of building caused by the war. The question of houses unfit for human habitation was the first necessity for new buildings, then following closely was overcrowding. With regard to the former, Rowcliffe Lane was the first consideration, for here the houses were all of mediæval type. . . . except three; these may be said now to be uninhabited, and only used as stores, etc. Up to the present time 110 houses have been built by the Urban Council in the Castle area, and all are now occupied, 30 are nearly completed on the Greystoke road, and it is probable that more may be erected. In all, 122 new houses erected by the Council are now occupied, and 22 have been made privately. . . . . No doubt there are still cases of overcrowding and in some of the yards houses unfit for accommodation, but until a satisfactory house can be shown to be vacant, it is quite impossible to suggest other accommodation. Back-to-back houses are few."

Whitehaven.—" It has long been well known. not only to the Town Council of Whitehaven but to the community generally, that the housing question takes the precedence of all others in this town as a factor of importance to the public health. 538 houses have been built in the past five years. Of these, 374 were built by the Council, 158 by the Whitehaven Colliery Company, and 6 by private individuals; 60 on the Coach Road Garden Site, 242 at Bransty, 22 at Arrowthwaite No. I. Scheme, and 50 at Arrowthwaite No. II. Scheme At the end of the year 14 more were in course of completion at

Arrowthwaite No. II. Scheme, while a further 100 were well advanced on Arrowthwaite No. III. Scheme. The Colliery houses built during the five years have been partly on Arrowthwaite and partly at Seacliff. During the past year a start was made with 18 houses, which are being built by the Whitehaven miners as dwellings for aged miners who are no longer able to earn their own livelihood. This is a very excellent project, and it is hoped when the first 18 are completed to proceed with a further lot of eighteen. . . . In my Annual Report for the year 1921 I dwelt at considerable length on the very unsatisfactory state of housing conditions generally in the town, and expressed the opinion that quite apart from the overcrowding of individual houses, which was very serious at that time, there were roughly 1,000 houses in Whitehaven which were really so insanitary as to be unfit for habitation, and which it was the duty of the Council as the Health Authority to deal with by closure and demolition at the earliest possible moment."

Wigton.—" The housing problem in Wigton is being approached by a preliminary inspection of the whole area. . . . . Up to the 31st December, 1925, we (the Medical Officer of Health and the Sanitary Inspector) had reviewed areas containing 227 houses. Of 93 examined in detail, 25 were found fit, 23 temporarily unfit, and 45 permanently unfit. Apart from the miserable structural condition of the houses, the primary causes are overcrowding an area, and the conversion of hand-loom weaving sheds into dwellings. . . . The total sum of Wigton's needs in housing as a result of our review and inspection is that we need 125 new houses, and that nearly 60 are in need of repair to make them reasonably fit to live in. Plans for two new houses built by private enterprise were passed in 1925. No other new houses have been built, or plans prepared for since 1920."

Workington.—" Schemes and plans have been approved by the Ministry of Health, and 100 houses are now in course of construction, which is an instalment of a larger housing scheme. At the end of 1925 some of the houses had been completed and occupied. On account of the shortage of houses overcrowding has not been improved. In 1922 a census was taken of 1,383 houses. Of this number, 19.6 per cent. were overcrowded and had two families. Again, owing to the shortage of houses, it has not been possible to deal with areas which were scheduled by my predecessor under the Housing Acts. . . . . During the five years, thirteen houses have been demolished. During the same period only eight houses and two bungalows have been built by private enterprise."

In the Rural Areas:—

Alston.—"In the last five years 18 houses have been condemned. and 5 houses closed. There is urgent need for at least 20 new houses in Alston."

Bootle.—"General housing conditions for the most part good, though there are some very old houses."

Brampton.—No report.

Carlisle.—No report.

Cockermouth.—"Since the Census (1921) 128 houses have been built, and 12 are known to have been closed. The general housing conditions in the area may be considered reasonably good on the whole. There is no excess of houses in any part of the district, but marked shortage exists at Flimby, Broughton, Great Clifton, Little Clifton, and Brigham. In 1923 the Council applied to the Ministry of Health for a loan to build 130 houses (50 at Flimby, 40 at Broughton, and 40 at Oughterside), but a loan was sanctioned for 36 only—12 in each of the three parishes. The 12 houses at Oughterside were built during 1925, while 12 are in course of erection at Flimby and 12 at Broughton. In addition to these, plans have been passed for 36 houses at Great Clifton. . . . . Marked overcrowding exists in Great Clifton, Little Clifton, Flimby, Broughton, and Brigham."

Longtown.—"In regard to housing there is nothing to add. No new building scheme has been adopted by public authority, and beyond a few houses built by private owners, only those minor improvements have been effected which inspection has called for."

Penrith.—"Only 43 new houses have shown themselves during the last five years. The District Council began a scheme and completed 14 houses, 8 at Lazonby and 6 at Winskill. The general standard of houses in this area is good, but all over the district and chiefly out of the villages the cottages and small farm houses are of a date long since past."

Whitehaven.—" It may be said generally that the housing conditions throughout the district are by no means satisfactory, and that in some parishes a considerable degree of overcrowding exists . . . in many houses one or more rooms may be in such a state as not to be occupied. . . . The Council is already engaged in building 50 houses at Thornhill, and 50 at Moresby Parks, while plans have been approved for building 26 houses at Hensingham, 10 at Distington, and 28 at Parton. This makes a total of 164 new houses either in course of building or about to be built."

Dr. Manson points out " that the provision of these new houses will not absolutely meet the problem of overcrowding, but it will go a very long way towards doing so. It will not, however, enable us to deal with the insanitary houses which are unfit for human habitation and unable to be made so. There are a number of such houses to be found in several parts of the district, but it has not been possible during the past five years to deal with any of them by closure and demolition, simply because it has not been possible to provide other accommodation for their occupants."

Wigton.—" No new house has been built during 1925. Speaking generally the working classes are well housed in airy, well-built cottages of stone. There is a fair amount of overcrowding, but not of a gross kind, and it is getting less. There has been no building scheme carried out by the Council at any time."

Inspection and Supervision of Food.

Most of the responsibility for this work falls on Local Sanitary Authorities and not on the County Council, but there are certain specific duties which devolve on County Councils.

The importance of a wholesome and clean milk supply cannot be exaggerated, and it is a matter for congratulation that so many milk producers are now recognising this fact and are distributing milk in sealed bottles to each consumer, instead of in large open cans.

The County Council has certain obligations under :—

1. The Milk and Dairies (Consolidation) Act, 1915.
2. The Milk (Special Designations) Order, 1923.
3. The Sale of Food and Drugs Acts, 1875-1907.
4. The Public Health (Milk and Cream) Regulations, 1912 and 1917.

1. THE MILK AND DAIRIES (CONSOLIDATION) ACT, 1915.

This Act, so far as it affected the County Council was postponed by the Milk and Dairies (Amendment) Act, 1922, until the 1st September, 1925, on which date it came into force. It should be noted that in this Act the term "Local Authority" includes both County Councils and Local Sanitary Authorities.

Section 1 of the Act empowers the Ministry of Health (with the concurrence of the Ministry of Agriculture and Fisheries) to make Orders for various purposes.*

The Act states that the Ministry of Health may prescribe in any Milk and Dairies Order by what Local Authority or Authorities "the several provisions thereof are to be enforced and executed."

The Sections of the Act with which County Councils are mainly concerned are those dealing with the health and inspection of cattle, the clear intention being that the Authority which has to deal with tuberculosis in cattle under the Tuberculosis Order, 1925 (issued by the Ministry of Agriculture and Fisheries), should also be the Authority for dealing with the question of tuberculous milk.

Under Section 3 of the Act if a Medical Officer of Health of a County is of opinion that tuberculosis is caused or is likely to be caused by the consumption of milk supplied from a dairy in which cows are kept within such County, he must act in accordance with the provisions of the First Schedule of the Act, and report the matter to his Council, and his report must be accompanied by any necessary veterinary or bacteriological reports furnished to him. The Council shall then take certain steps with a view to stopping the milk supply. As a result of their investigations the Council *may* make an order prohibiting a dairyman, either absolutely, or unless such conditions as may be prescribed in the order are complied with, from supplying for human consumption any milk from the dairy, or from any particular cow or cows therein until the order has been withdrawn.

When no order is made, the responsible Authority (County Council) shall allow the dairyman any reasonable expenses incurred by him in showing cause why the order should not be made. If an order is made prohibiting the supply or use of milk against a dairyman he shall, unless the order has been made in consequence of his own default or neglect, be entitled to recover from the responsible Authority full compensation for any damage or loss which he may have sustained by reason of the making of the order. The dairyman shall also be entitled to full compensation for any damage or loss which he may sustain in consequence of the responsible Authority unreasonably neglecting or refusing to withdraw an order. The Court to which the appeal is made shall determine whether the order was made in consequence of the dairyman's default or neglect.

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* Up to the end of 1925 no Orders had been made, but in July, 1926, The Milk and Dairies Order, 1926, was issued, and came into operation on the 1st October, 1926.

Section 4 of the Act is important, and is as follows:—

(1) If the medical officer of health of any local authority has reason to suspect that tuberculosis is caused, or is likely to be caused, by the consumption of any milk which is being sold or exposed or kept for sale within the area of the local authority, he shall endeavour to ascertain the source or sources of supply, and on ascertaining the facts shall forthwith give notice of them to the medical officer of health of the county or county borough in which the cows from which the milk is obtained are kept, whether the dairy where they are kept is within or without the area of the local authority, unless the local authority are themselves the council of that county or county borough.

(2) On the receipt of such notice it shall be the duty of the medical officer of health of the county or county borough to cause the cattle in the dairy to be inspected, and to make such other investigations as may be necessary.

(3) Sufficient notice of the time of the inspection shall be given to the local authority whose medical officer of health gave the notice, and to the dairyman to allow that officer or a veterinary inspector or other veterinary surgeon appointed by the authority, and, if desired, another veterinary surgeon appointed by the dairyman being present at the inspection if either party so desire.

(4) The council of the county or county borough on whose medical officer of health the notice is served shall send to the medical officer of health of the local authority who gave the notice copies of any reports which may have been made by the medical officer of health making the inspection, and of any veterinary or bacteriological or other reports which may have been furnished to him, and shall give him information as to whether any action has been taken upon those reports and as to the nature of that action.

Under Section 5 it is an offence against this Act to sell for human consumption, or use in the manufacture of products for human consumption, the milk of any cow which has given tuberculous milk or is suffering from:—

Emaciation due to tuberculosis,
Tuberculosis of the udder,
Acute inflammation of the udder,
Acute mastitis,
Actinomycosis of the udder,
Anthrax,
Foot-and-Mouth disease,
Suppuration of the udder,

and any of the following conditions which have been added by the Milk and Dairies Order, 1926:—

Any comatose condition.

Any septic condition of the uterus.

Any infection of the udder or teats which is likely to convey disease.

Section 18 (5) places the duty of taking proceedings under this Section on County Councils and County Borough Councils, without prejudice to the power of a Sanitary Authority to take such proceedings.

Under Section 10 a local authority may and when required by the Ministry of Health must appoint Veterinary Inspectors, and provide or arrange for the provision of such facilities for bacteriological or other examination of milk as may be approved by the Ministry.

No definite plan of procedure has yet been agreed upon, but it would seem that there are three methods by which the sale of tuberculous milk may be detected:—

1. By the periodic veterinary inspection of all dairy cows.
2. By the taking of samples of milk for bacteriological examination.
3. By waiting for representations from other authorities.

Up to the end of 1925 action was taken in ten cases on representations being made by authorities outside the County that tuberculous milk was being sent into their area.

2. The Milk (Special Designations) Order, 1923, was issued by the Ministry of Health under the Milk and Dairies (Amendment) Act, 1922, and under it licences are granted to produce or retail what is called "designated" milk.

There are four grades of "designated" milk:—

(1) Certified milk produced from cows which by tuberculin tests are shown to be free from tuberculosis. A certain standard—which is very high—of bacteriological purity is required.

(2) Grade A (Tuberculin tested) produced from cows free from tuberculosis, but the standard of bacteriological purity is not so high as (1).

(3) Grade A.—In this the cows are not required to be tuberculin tested, but the same degree of bacteriological purity is required as in (2).

(4) Pasteurised Milk, which must be pasteurised by an approved method, and although the standard of bacteriological purity demanded is not so high as (1) it is higher than (2).

In the County there are two producers of Certified Milk and two of Grade A (Tuberculin Tested) Milk.

The accompanying report of the County Analyst deals with action taken under the Sale of Food and Drugs Acts and the Public Health (Milk and Cream) Regulations.

ANNUAL REPORT OF THE COUNTY ANALYST.

1. During the 12 months ended the 31st December, 1925, I have analysed 359 samples of Food and Drugs submitted by the Inspectors appointed under the Sale of Food and Drugs Acts for the County of Cumberland, viz.:—

From Whitehaven Division	114
From Carlisle Division	56
From Workington Division	92
From Wigton Division	28
From Penrith Division	69
Total	359

2. The following table briefly summarises the result of the analysis of these samples, together with the action taken in the case of those samples found to be other than genuine:—

Samples of Milk submitted for analysis ...	227
Samples of other articles	132
	359
Number adulterated or below standard ...	33
,, of doubtful quality	1
,, of Appeal samples	20
,, of Samples taken in transit ...	4
,, of Persons cautioned	14
,, of Persons summoned	14
,, of Persons convicted	7

Number of Persons discharged	2
.. of Persons to pay costs	4
.. of Cases withdrawn	1
.. of Cases in which no action taken ...	5
.. of Cases pending	1
Amount of Fines	£11 11 0
Amount of Costs	£19 1 2

3. The percentage of adulteration for the year is 10.5; in this figure are included all samples other than Appeal and Reference samples which have been reported as not being of genuine quality.

4. Two cases only occurred during the year of the illegal addition of preservatives to food, although each sample of perishable foodstuff is systematically examined for such additions.

One of the samples was Milk, to which Boric Acid to the extent of 45.5 grains per gallon had been added, and the other was Preserved Cream containing 0.50% of Boric Acid instead of the 0.40% which is allowed under the Public Health (Milk and Cream) Regulations, 1912/17.

In each case proceedings were instituted, the information relating to the sample of Milk being dismissed, with a warning, and a fine being inflicted in the case of Preserved Cream.

5. Of the 227 samples of Milk submitted during the 12 months, 32 were returned as being adulterated or below standard, while 24 samples were taken as Appeal samples or as Reference samples.

Excluding the latter, the percentage of adulteration amounted to 15.76—a markedly high figure.

That the quality of the Milk produced in the County can be of satisfactory quality is shown by the fact that of the 169 samples of genuine quality reported upon, the average figures for Non-fatty Solids and for Fat were as follows:—

Non-fatty Solids	8.77%
Fat	3.64%

6. The main feature of the year's work lay in the investigation carried out at the request of the Ministry of Health into the occurrence of Glass particles in articles of food packed in glass containers, the results of which have been reported to the Ministry's Inspector.

7. Of samples other than Milk, one only, a sample of Sponge Cake containing Boric Acid to the extent of 10 grains per lb., was not of entirely satisfactory quality.

(Signed) Cyril J. H. Stock.

COUNTY OF CUMBERLAND.

Public Health (Milk and Cream Regulations), 1912 and 1917.

Samples Examined.

Cream Preserved.

Received.	From	Marked.	Milk Fat.	Boric Acid.
Jan. 21, 1925 ...	Whitehaven ...	C.	... 48.05%	... 0.14%
Feb. 11, 1925 ...	Penrith ...	A.6	... 47.65	... 0.31
Feb. 19, 1925 ...	,, ...	K.3	... 48.90	... 0.23
Mar. 11, 1925 ...	Workington ..	R.H.3	... 51.80	... 0.20
Apr. 16, 1925 ...	Whitehaven ..	A.3	... 48.93	... 0.28

Received.	From	Marked.	Milk Fat.	Boric Acid.
Apr. 29, 1925	Penrith	B.9	49.16	0.26
May 27, 1925	,,	3.K.	48.62	0.40
June 16, 1925	Workington	C.	54.00	0.25
July 23, 1925	Penrith	C.7	58.80	0.20
Aug. 26, 1925	,,	4.K.	55.50	0.24
Aug. 28, 1925	Whitehaven	A.10	52.86	0.30
Sept. 8, 1925	Workington	D.	50.13	0.50
Dec. 1, 1925	,,	D.	53.56	0.25
Dec. 3, 1925	Penrith	3.K.	53.70	0.27

All free from "thickening substance."

Cream Unpreserved.

Oct. 14, 1925 ... Penrith ... D.6 ... 50.50% ... Nil

Milk.

227 samples (207 taken formally and 20 as "appeals to the cow") were examined throughout.

One was found to contain Boric Acid:—

Aug. 26, 1925 ... Whitehaven ... C.I.M. & C.W. ... 3.35% ... .065%

Proceedings.

Sample.	Court and Date.	Result.
Sept. 8, Workington "D."	Workington P.S.. 14/10/1925	Fined £7 7s. 0d., inc. costs
Aug. 26, Whitehaven "C.I.M. & C.W."	Cleator Moor P.S.. 27/11/1925	Pay 10/- costs & £2 2s. 0d. fee

Prevalence of, and Control Over, Infectious Diseases.

Smallpox.

During the period under review, apart from the outbreak referred to below, I have been asked on six different occasions to see doubtful cases which raised suspicions of Smallpox.

The only occasion, however, on which a definite diagnosis of Smallpox was arrived at was on the 4th March, 1924, on which date a case was seen in the Cockermouth Rural District; this was the first diagnosed case of the Epidemic, during which 186 cases were notified.

This outbreak was dealt with fully in my report for 1924. It is, therefore, unnecessary to say more than again to emphasise my opinion that we are not even now safe from another outbreak, so long as cases continue to occur in various parts of the country.

Vaccination and re-vaccination at appropriate intervals will certainly prevent Smallpox.

In the words of Sir George Newman, "Smallpox was a national scourge a century ago; to-day it is the perquisite of those who elect to have it."

Scarlet Fever.

During the year 1925, 991 cases of Scarlet Fever were notified (643 in Urban and 348 in Rural districts), with 11 deaths (6 in Urban and 5 in Rural districts).

In	1921	there	were	346	cases	with	6	deaths
,,	1922	,,	,,	391	,,	,,	2	,,
,,	1923	,,	,,	445	,,	,,	9	,,
,,	1924	,,	,,	438	,,	,,	6	,,
,,	1925	,,	,,	991	,,	,,	11	,,

From the above figures it would appear that the number of cases notified each year is increasing, but the disease generally is of a much milder type than one was accustomed to see even 25 or 30 years ago, and although this is so we must not on that account treat the disease as trifling and as of no importance.

The average fatality-rate, i.e., the proportion of deaths to notified cases, is 1.3 per cent., but the fact that even mild cases are very apt to have serious after consequences must always be borne in mind.

Thus serious kidney and heart disease, gland and joint troubles, and ear complications, causing permanent deafness or even more serious results, are very apt to follow even a mild attack.

An important advance in the final control of Scarlet Fever has been the result of the work of the Drs. Dick, of Chicago. Their work has shown that the disease may now be considered a local infection of the mucous membrane of the nose and throat, in which a poison is produced. This poison is absorbed into the system of the patient when it gives rise to the rash and other constitutional symptoms.

By what has now become known as the " Dick test " it is possible to separate the susceptible from the immune. The time is not far off, if it has not already arrived, when by means of prophylactic injections children can be rendered immune from Scarlet Fever.

Diphtheria.

During the year 1925, 163 cases of Diphtheria were notified (105 in Urban and 58 in Rural districts). There were 13 deaths (9 in Urban and 4 in Rural districts).

					Case mortality.
In 1921	there were	300	cases &	38 deaths	12.6 %
,, 1922	,, ,,	226	,, ,,	15 ,,	6.6 ,,
,, 1923	,, ,,	214	,, ,,	27 ,,	15.9 ,,
,, 1924	,, ,,	144	,, ,,	9 ,,	6.2 ,,
,, 1925	,, ,,	163	,, ,,	13 ,,	8.0 ,,

The position with regard to Diphtheria in the County is somewhat disconcerting and unsatisfactory While the attack-rate per cent. of population is not excessively high compared with that in other counties of England, the case-mortality rate is alarmingly high, being an average of 9.7 per cent. for the past five years. Whilst in 1923 the case-mortality rate was 15.9, the highest of any such rate in the counties of England.

For the benefit of medical practitioners and members of Local Authorities, I think it may be worth while to reprint the Memorandum on Diphtheria, issued by the Ministry of Health in 1922.

Experience of many recent outbreaks of Diphtheria has shown a tendency to rely too much on a bacteriological diagnosis and to withold an initial dose of antitoxin until the result of the examination of a swab has become known.

Surely with such a remedy as antitoxin in our hands, which if used early in the case is an almost certain cure, and the administration of which is quite harmless, even if the case should not turn out to be Diphtheria, it is sound practice if on clinical examination the case is suspicious enough to make the taking of a swab advisable, it is equally advisable to administer an efficient dose of antitoxin, without waiting and possibly endangering the life of the patient, for a bacteriological report.

Experience has also shown that in many quarters the initial dose is ineffectual, because it is far too small.

The initial dose in every case should never be less than 8,000 units.

During the year 1925 Diphtheria was notified in each of the Sanitary districts, with the exceptions of the Penrith Urban, Alston, and Carlisle Rural districts.

Not only have we, in antitoxin, an almost certain cure for Diphtheria, if used early enough, but recent discoveries have made it possible to differentiate between those persons in a community who are susceptible to Diphtheria and those who are immune, by means of the Schick test.

The advantages of this test when Diphtheria occurs are obvious, for not only is it possible to say who is liable to take Diphtheria and who is not, but it is also possible to render those who are susceptible immune.

Immunity is conferred by means of inoculations, which experience in Birmingham, Edinburgh, and other places, and particularly in America, has shown to be very efficient and quite harmless.

The immunity will certainly last for many years, and there is very good reason to think that immunity once conferred will last throughout life.

There is a general belief that insanitary conditions in and about houses is the *direct* cause of Diphtheria, but this is not so. It is true that those persons living in insanitary surroundings are more susceptible to the disease, owing to the conditions in which they live, and therefore such surroundings may be said to be the *indirect* cause; but in order to acquire the disease direct contact with the causative germ must take place.

How then does anyone contract the disease when there is no known case in the neighbourhood?

Bacteriological tests have shown that the germ of Diphtheria may be present and grow in the throat of apparently healthy persons without causing any signs of illness, and it is from these so-called "Carriers" that the infection is derived, and this will account for many of the outbreaks which are so difficult to account for and so very difficult to deal with.

Any medical practitioner requiring antitoxin can now obtain it at any time, in all the sanitary districts, on application to the Medical Officer of Health. In the Cockermouth Rural area arrangements have been made with chemists in Maryport, Workington, Cockermouth, Aspatria, and Keswick to keep it in stock.

MEMO. 68/Med.

A. DIPHTHERIA ANTITOXIN.

ARRANGEMENTS FOR SUPPLY OF DIPHTHERIA ANTITOXIN AND IMPORTANCE OF ITS EARLY ADMINISTRATION IN SUSPECTED CASES OF DIPHTHERIA.

The persistent incidence of Diphtheria and the continued high mortality from this disease make it desirable to draw attention to the following questions relating to the supply and use of Diphtheria Antitoxin.

The Diphtheria Antitoxin Orders issued by the Local Government Board in August, 1910, authorised Local Authorities to provide medical practitioners with antitoxin serum for use in the prevention and treatment of Diphtheria, and required that the arrangements with respect to the keeping, distribution, and use of the diphtheria antitoxin should be made in accordance with the advice of the Medical Officer of Health. The circular letter which accompanied the Orders referred, in connection with these arrangements, to the importance of promptness in antitoxin treatment. The arrangements should be such as to secure that the medical practitioner who needs a supply of antitoxin from the Local Authority can always obtain it without delay. Moreover, the Local Authority can help to educate the general public regarding the insidious onset and the grave danger of diphtheria, and so induce them to obtain early diagnosis and treatment.

It cannot be too strongly emphasised that early administration of antitoxin not only reduces the mortality from diphtheria, but causes the disease to run a milder and shorter course; while by lessening the period of the patient's infectivity to others it reduces the period of occupation of a bed in an isolation hospital. It is thus an important measure in the interests of economy as well as of the public health. It should be the aim of every medical practitioner so soon as on clinical evidence he has diagnosed diphtheria either to have the patient removed forthwith to an infectious diseases hospital or himself administer an adequate dose of antitoxin. In either case he should satisfy himself that, by one means or the other, antitoxin is given with the least possibly delay after he has made his provisional diagnosis. This applies particularly to all cases of laryngeal obstruction or of severe laryngeal catarrh or "croup" of doubtful nature in children.

The decision as to what constitutes a case of clinical diphtheria naturally rests with the individual practitioner, and bacteriological evidence may be essential for a final diagnosis. But once the decision is made on clinical grounds that the case is one of diphtheria, antitoxin should be given forthwith without waiting for the report of the bacteriological examination.

On the other hand, it may here be noted that the presence of the diphtheria bacillus in the throat or nose of a person not presenting local signs or symptoms of diphtheria is not necessarily an indication for the administration of antitoxin. There is no evidence that antitoxin has any effect in causing the disappearance of diphtheria bacilli from a chronic carrier. Persistent carriers, however, very frequently suffer from abnormal conditions of the nose or throat, requiring special examination and treatment.

CURATIVE DOSES OF ANTITOXIN.

Experience has shown that for the purposes of treatment it is seldom safe practice to rely on any dose which is less than 8,000 units, whatever the age of the patient may be. The magnitude of the initial dose and the occasions on which subsequent doses are given must be determined by close observation of the case, and it is impossible to lay down a stereotyped procedure. As an indication it may be stated, especially from the experience of Metropolitan Asylums Board Hospitals, that when in a case seen early in the attack an initial dose of 8,000 units (16,000 or more if the case is severe) is followed by definite improvement at the end of about 12 hours, further administration of antitoxin is unnecessary. On the other hand, if at the end of about 12 hours (or sooner in urgent cases) there is no evidence of improvement or it is clear that the disease is advancing, a second dose of similar magnitude should be given, followed by a further dose if no distinct improvement occurs.

Larger initial does, e.g., from 16,000 to 30,000 units, are specially required, when for any reason the administration of antitoxin has been delayed until the third or fourth day from the onset. The need for further administration will be determined by the progress of the disease, on the lines just indicated.

METHODS OF ADMINISTRATION.

As regards the method of injection of the serum, both the intramuscular and subcutaneous routes may in general be considered satisfactory, but, in view of the slower absorption by the latter the intramuscular route should be preferred.

In very severe and late cases the administration of 8,000 or more units intravenously in addition to the intramuscular dose may be advisable; but it is not considered that there is justification for the general use of the intravenous method, particularly as the technique of the injection is less simple.

If the serum is to be given intramuscularly, the site of the injection should be the outer part of the front of the thigh or the buttock, the former being preferable except in the case of very small children and when a large volume of serum has to be given. In using the thigh, the Vastus Externus muscle is grasped firmly in the left hand, and the needle is introduced somewhat obliquely. The pain inflicted is usually trifling; most patients who have had experience of both prefer the intramuscular method to subcutaneous injection into the abdominal wall.

PROPHYLACTIC ADMINISTRATION OF DIPHTHERIA ANTITOXIN.

The administration of a prophylactic dose of serum may be desirable in order to confer temporary immunity, in the case of a person who has been in close contact with a patient suffering from diphtheria. In general, however, it may be said that a prophylactic dose is not indicated for "contacts" when they are under daily observation and when serum can be obtained and administered at short notice if symptoms develop. This is especially true in the case of adults. The usual prophylactic dose is 500-1,000 units.

SUPPLY OF ANTITOXIN.

As a means of simplifying the supply and use of the serum, it is suggested that Medical Officers of Health should advise Local Authorities to obtain and stock diphtheria antitoxin only in phials which contain 8,000 units for treatment, and 500 units for prophylaxis; the former should be concentrated serum, containing the 8,000 units in less than 10 c.cm. A curative dose can then be given in one injection with a 10 c.cm. syringe. In the case of a prophylactic dose the 500 units should not be contained in less than 2 c.cm.

It is suggested also that the Medical Officer of Health, whenever he thinks that such a course would be useful, should arrange to send out with each phial containing 8,000 units a printed slip stating that the whole of the contents should be regarded as ordinarily constituting a single dose for a patient of any age (see under "Curative Doses" above). In some districts also it may be advantageous to invite the Local Authority to assist practitioners in the District by keeping one or more 10 c.cm. antitoxin syringes and a supply of needles, together with a portable steriliser, at some convenient place where they can be issued at any hour on loan on the signature of the medical man.

It is desirable that any new arrangements made for the above purposes should be notified to the medical practitioner in the district.

Enteric Fever.

Only three cases were notified during 1925 (1 in Keswick, 1 in Workington, and 1 in Cockermouth R.D.). There were no deaths.

The practical elimination of Enteric (Typhoid) Fever from our midst is one of the triumphs of preventive medicine during recent years. In the South African war 28.5 per cent. of the troops suffered, but in the European war only 1 per cent. suffered.

This is the first year for which I have records, in which no death has taken place from Enteric in the Administrative County.

	Cases notified.	*Deaths.*
1921 ...	7 ...	1
1922 ...	18 ...	2
1923 ...	2 ...	1
1924 ...	26 ...	2
1925 ...	3 ...	0

Enteric Fever has always been the disease associated with insanitary conditions, and I would remind those Sanitary Authorities who have failed in their duties in this respect that their responsibilities are great. It is true that highly polluted water may be drunk for long periods, serious drainage defects and serious housing defects may be in existence for years, midden privies may for a long time appear innocuous, but once let a case or a "carrier" of Enteric Fever appear in such a community, and an epidemic is almost a certainty.

Puerperal Fever.

	Cases notified.	*Deaths.*
1921	7	1
1922	4	5
1923	9	3
1924	10	8
1925	5	1

Measles.

In 1921 there was 1 death
,, 1922 ,, were 20 deaths
,, 1923 ,, ,, 50 ,,
,, 1924 ,, ,, 7 ,,
,, 1925 ,, ,, 30 ,,

Whooping Cough.

In 1921 there were 23 deaths
,, 1922 ,, ,, 136 ,,
,, 1923 ,, ,, 13 ,,
,, 1924 ,, ,, 46 ,,
,, 1925 ,, ,, 36 ,,

It is worthy of note that during the five years under review there were 34 deaths from Scarlet Fever, whilst there were 108 from Measles, and 254 from Whooping Cough.

Most Sanitary Authorities treat a considerable number of cases of Scarlet Fever in their Isolation Hospitals, but few, if any, cases of Measles or Whooping Cough are so treated, yet there are more than 10 times as many deaths from these two diseases as from Scarlet Fever.

In recent years Scarlet Fever has diminished much in severity, as well as in incidence, but no such diminution is noted in either Measles or Whooping Cough. They are both treated very lightly by parents, and are still considered one of the inevitable ailments of childhood.

If Sanitary Authorities would undertake to treat more cases of these two highly-infectious and dangerous diseases in their Isolation Hospitals, much good would result. In the first place, it would impress on the minds of parents that neither Measles nor Whooping Cough was a disease to be treated lightly or taken no notice of; and in the second place would, I feel sure, be followed by a marked decrease in the death-rate from these two diseases, and from the respiratory complications which so often follow them.

Diarrhœa.

In 1921 there were 102 deaths from Diarrhœa
,, 1922 ,, ,, 60 ,, ,, ,,
,, 1923 ,, ,, 49 ,, ,, ,,
,, 1924 ,, ,, 41 ,, ,, ,,
,, 1925 ,, ,, 62 ,, ,, ,,

In recent years deaths from this ailment have shown a marked tendency to decline, more particularly in those areas where attention has been paid to sanitary improvements. Much, however, could yet be done in some sanitary areas to improve the sanitary surroundings of the people, e.g., the abolition of privy middens, greater attention to scavenging, provision of sanitary ashbins, etc.

In this connection the presence of flies is such a serious menace to health that something of the life history and habits of flies should be known to all.

The fly before reaching maturity passes through three stages—(1) Egg, (2) Maggot; and (3) Chrysalis.

The breeding places of flies are selected, keeping in mind the requirements of the insect in the maggot stage, since the female will only deposit her eggs in material which will provide food as well as a home for the future maggots.

To satisfy the maggot the food must be capable of being readily swallowed and digested, and must be moist, and more or less warm.

The chief breeding places are in fresh and fermenting horse manure, but the fly also breeds freely in accumulations of human and pig excrement, and in decaying and fermenting organic matter of various kinds, such as is often present in ashpits and large deposits of house refuse, such as one sees in almost every village.

The eggs are generally laid in small heaps, and are generally concealed in small crevices of the material that is to supply the food of the maggot. Instead of disappearing alone to lay its eggs, flies generally prefer to do this in company, and clusters of from 25 to 50 may often be found busy at this operation.

A female house-fly lays from 120 to 150 eggs at one time, and may do so five or six times during its life, so that each female may produce from 600 to 900 eggs.

In hot weather a house-fly may be laying eggs in three weeks from the time it itself was an egg.

In a short time, varying from a few hours to three days, the eggs hatch into tiny white footless maggots. These burrow into and feed freely on the material in which they are deposited, and attain their full development in from 42 hours to 4 or 5 days, and it is worth while remembering that clusters of eggs and maggots are only found in the superficial layers of a manure heap—at most four or five inches deep—it is too hot deeper in.

Before the fully-fed maggot passes into its next stage it leaves the place where it has been feeding and seeks a drier and cooler spot, and having found a suitable spot the maggot becomes the chrysalis, and remains motionless from 3 to 4 days to as many weeks, depending on the temperature

The house-fly is not merely a nuisance, but under certain conditions is a carrier of disease, and a very serious danger to health. If the following is remembered the above statement is easily understood. In human excrement are often to be found living germs of certain dangerous diseases, as well as the eggs of different kinds of worms.

Human excrement is often a breeding place, and it is a favourite food for flies, and so they may swallow the living germs and eggs.

Human food, especially, milk, sugar, jam, bread, and cheese (all consumed uncooked) has a powerful attraction for flies. They may and often do pass directly from one to the other.

Living germs or eggs swallowed by flies may pass through them unaltered.

Flies void their liquid excrement at frequent intervals—especially when feeding—hence food may become contaminated with living germs.

It is the bounden duty of everyone, by all means possible, to help to protect the community from such dangers, and here again prevention is the better method, it is better to prevent flies from breeding by not supplying them with suitable breeding places, than to let them breed and then try to kill them.

No system of sanitary control can be regarded as efficient which allows flies to have access to material containing or possibly containing, the germs of disease.

On removal to the manure heap or dump, fresh horse manure, during the fly breeding season, should be treated by close packing or turning over the surface, the object being to kill the eggs or maggots by subjecting them to the great heat produced in the deeper layers by the fermentation of the manure.

Influenza.

In 1921 there were 56 deaths from Influenza.
,, 1922 ,, ,, 178 ,, ,, ,,
,, 1923 ,, ,, 41 ,, ,, ,,
,, 1924 ,, ,, 53 ,, ,, ,,
,, 1925 ,, ,, 132 ,, ,, ,,

During the five years there have been notified :—

	1921.	1922.	1923.	1924.	1925.
Encephalitis Lethargica .	6	3	18	8	4
Malaria	—	—	—	—	—
Dysentery	3	—	3	—	—
Trench Fever	—	—	—	—	1

Notifiable Diseases (other than Tuberculosis) during the year 1925.

Disease.	Total cases notified.		Cases admitted to Hospital.		Total deaths.
Smallpox	—	..	—	...	—
Scarlet Fever ...	983	...	554	...	11
Diphtheria ...	159	...	87	...	13
Enteric Fever ...	3	...	2	...	—
Puerperal Fever .	7	...	1	..:	1
Pneumonia ...	146	...	—	...	217
Ophthalmia Neonatorum ...	8	...	1	...	—

Disease.	Total cases notified.	Cases admitted to Hospital.	Total deaths.
Encephalitis Lethagrica	4	—	1
Cerebro Spinal Meningitis	1	—	—
Acute Poliomyelitis	2	—	—
Trench Fever	1	—	—

Steam disinfectors are available at the Isolation Hospitals used by Arlecdon and Frizington, Cleator Moor, Egremont, Harrington and Whitehaven Rural (Galemire Hospital), Keswick, Maryport, Millom and Bootle Rural, Penrith and Penrith Rural, Whitehaven and Workington, and Longtown Rural

In the remainder of the districts the only disinfection carried out is by means of fumigation and soaking in disinfectants, which in the majority is supplied free.

Arrangements for Bacteriological examinations are arranged for in all the Sanitary districts, except Egremont, Millom, Wigton, Holme Cultram, Alston Rural, Brampton Rural, and Wigton Rural.

Tuberculosis.

This subject is dealt with, not in any chronological order, but in the form of answers to the specific headings in Circular 648 of the Ministry of Health.

Particulars of new cases of tuberculosis and of deaths from the disease in the area during 1925 :—

Age. Periods.	New Cases.				Deaths.*			
	Pulmonary.		Non-Pulmonary.		Pulmonary.		Non-Pulmonary.	
	M.	F.	M.	F.	M.	F.	M.	F.
0	—	1	2	2	—	1	—	2
1	1	—	4	6	2	—	2	5
5	8	14	16	9	1	2	2	6
10	11	15	7	3	2	2	2	1
15	19	11	5	5	8	9	4	2
20	13	24	—	4	10	13	1	2
25	16	34	4	2	13	19	2	1
35	17	18	3	2	15	12	—	1
45	23	12	—	3	15	8	1	1
55	5	5	—	2	6	4	2	1
65 & upwards	1	4	—	1	—	—	1	1
Totals	114	138	41	39	72	70	17	23

* The figures supplied by the Registrar-General exceed the total deaths here given by 22, made up as follows:—Pulmonary, F. 5; Non-Pulmonary, M. 13, F. 4.

Public Health (Prevention of Tuberculosis) Regulations, 1925.

Under these Regulations " No person who is aware that he is suffering from tuberculosis of the respiratory tract shall enter upon any employment or occupation in connection with a dairy which would involve the milking of cows, the treatment of milk, or the handling of vessels used for containing milk." (Article 4.)

The duty of enforcing these Regulations is laid on the Authorities of Urban and Rural Districts, but application was made by the County Council to the Ministry of Health to be declared an Authority under Section 2 of the Public Health (Prevention and Treatment of Disease) Act, 1913, to execute and enforce these Regulations, which application was granted, but although the County Council and their officers have all the powers, rights and duties of a local authority, this does not affect the powers, rights and duties of any local authority.

So far no action has been taken under these Regulations, and, so far as I am aware, no action has been necessary.

Public Health Act, 1925. Section 62.

Under this Section of this Act, where it is proved to the satisfaction of a Court of Summary Jurisdiction :—

(a) That any person suffering from pulmonary tuberculosis is in an infectious state ; and

(b) that the lodging and accommodation provided for that person is such that proper precautions to prevent the spread of infection cannot be taken, or that such precautions are not being taken ; and

(c) that serious risk of infection is thereby caused to other persons ; and

(d) that a suitable hospital or institution exists for the reception and accommodation of that person ;

the Court upon the application of the County Council or of the local authority may, and with the consent of the superintending body of the hospital or institution, make an order for the removal of that person to that hospital or institution and for his detention and maintenance therein for such period not exceeding three months, as the Court think fit.

No action has yet been taken under this Section of the Act, either by the County Council or by a local authority.

Tuberculosis Scheme.

1. The dispensaries and the tuberculosis officers attending each are as follows:—

Dispensaries.	*Tuberculosis Officer.*
Penrith	Dr. A. C. B. Mc.Murtrie
Wigton	Dr. Haydock *
Maryport	,, **
Egremont	,, **
Cockermouth	Dr. C. A. Mason
Cleator Moor	Dr. Towers
Millom	,,
Whitehaven	Dr. Manson
Workington	Dr. Macpherson

* After the closing of Englethwaite Colony this dispensary was taken over by Dr. M. S. Fraser.

** Dr. Haydock left the district in 1926, and Dr. H. Simpson filled the vacancy.

Part of the time of a Nurse, fully trained and experienced in tuberculosis, is utilised at each dispensary.

The residential institutions to which patients are sent are:—

Blencathra Sanatorium, Threlkeld, Keswick;

Stannington Sanatorium, Morpeth, Northumberland; and up to November, 1925,

Englethwaite Industrial Colony, Cotehill, Carlisle.

At Blencathra 30 beds are normally available. It has been the custom to admit cases of fairly advanced disease when there was a reasonable prospect of arrest of the disease, and not to confine admissions to early and curable cases entirely.

To Stannington children are admitted with early disease when there is a good prospect of ultimate cure. Eight beds are generally occupied in this institution.

At Englethwaite Colony provision was made for 40 patients, the majority being suitable for Colony treatment proper, but provision was made for the admission of some advanced cases. In November the Colony ceased to exist as an institution for the treatment of tuberculosis. At the time of writing negotiations are in progress to arrange with certain local authorities to deal with advanced cases in special pavilions in their isolation hospitals.

2. *Precise particulars of arrangements for co-operation with Sanitary Authorities and their Officers.*

In the Boroughs of Whitehaven and Workington and the Urban District of Cockermouth the Medical Officer of Health of each is also a tuberculosis officer under the County Council scheme, consequently the closest co-operation exists.

On the 18th December, 1924, the Public Health (Tuberculosis) Regulations, 1924, and Circular 549 were issued by the Ministry of Health. Under these Regulations every Medical Officer of Health must furnish the Medical Officer of Health of the County, as soon as possible after the end of each quarter, with a statement showing:—

(a) The number of cases of tuberculosis on his register at the commencement of the quarter;

(b) the number of cases notified to him under the Regulations of 1912 for the first time during the quarter;

(c) the number of cases removed from the register during the quarter (giving the name and address of each such case, and the reason for such removal); and

(d) the number of cases remaining on the register at the end of the quarter.

The effect of these Regulations and the Circular has been most marked in co-ordinating the work between the District Medical Officers and the County Medical Officer (who is also the Chief Tuberculosis Officer).

Previous to these Regulations, both the District and the County Medical Officers kept registers of notified cases, but when, in order to get the new Regulations into working order, the respective registers came to be compared great discrepancies were found, names appearing in one register but not in the other. After a considerable amount of correspondence and many interviews the registers are now all in order, and as interchange of names, etc., has to take place every quarter, the information in the registers can never be very far from accurate. Of course, the requirements of the 1924 Regulations do not interfere with the obligation imposed by Article XI. of the 1912

Regulations, that the District Medical Officer sends to the County Medical Officer a statement weekly of every notification received by him.

All new cases discovered, whether at the dispensaries or school clinics, are notified to the District Medical Officer, unless definite information is obtained that the case has been notified by the medical practitioner in attendance.

District Medical Officers are now also informed of any death occurring from tuberculosis, as well as of the admission of a case to a Sanatorium, or the removal from one address to another, in order that, should it be thought advisable, the premises may be disinfected.

When the housing conditions or the home surroundings require attention a letter is sent to the sanitary authority.

If there is one infectious disease in which disinfection ought to be thorough and in which it can do good in preventing the spread of infection, that disease is tuberculosis, and I am afraid that in some sanitary districts disinfection of premises, bedding, &c., is not carried out so thoroughly and so efficiently as it ought to be.

3. *The nature and extent of co-operation with general and special hospitals, school clinics and other institutions.*

The case papers and clinical forms of cases of tuberculosis, whether pulmonary or non-pulmonary, admitted to general or special hospitals under the County Council scheme, are sent to the hospital after the patient has been admitted, and notes of progress are added to the forms whilst the patient is in hospital. On the discharge of the patient the papers are returned to the County Health Department with recommendations, &c., for treatment, if any further be required, but should the patient have to remain in the Sanatorium for longer than three months the case is reviewed at the end of that time and each month subsequently.

As the school clinics and maternity and child welfare clinics are held in the same buildings and by the same Medical Officers, the co-operation between the various sections of the public health service is of the closest.

Tuberculosis work in connection with the Ministry of Pensions continues to occupy a considerable amount of time, as the Medical Boards still make application for reports on ex-Service men suffering from tuberculosis in connection with pensions or for allowances for treatment.

Periodical reports on all these cases have to be sent to the Ministry of Pensions, but the number of cases of ex-Service men applying for sanatorium or dispensary treatment is gradually becoming less.

4. *Any special arrangements made to secure the co-operation of medical practitioners, and the working of the arrangements set out in Memorandum 286 in regard to the co-operation of the work of tuberculosis officers and insurance practitioners.*

That cordial relations between private practitioners and tuberculosis officers exist is clearly shown by the increased and still increasing number of doubtful and suspected cases of tuberculosis which are either seen at the dispensaries or at the patients' own homes, at the request of practitioners, and the co-ordination of work has been materially strengthened since the issue by the Ministry of Memorandum 286 in December, 1923, which had for its object " the desirability of securing a greater degree of co-ordination than at present exists between the work of insurance practitioners on the one hand and the tuberculosis service of local authorities on the other, with a view to enhancing the effectiveness of the national scheme for the prevention and treatment of tuberculosis."

In this Memorandum a number of forms for communications between the tuberculosis officer and the panel practitioners were suggested. Either these forms or in many cases personal letters are now extensively used in notifying practitioners of treatment suggested or of admissions to or discharges from a sanatorium of one of his patients.

When a patient is under domiciliary treatment periodical reports are received on the " Record of Progress form " from the panel practitioner under whose care the case is, and any suggestions as to treatment are carefully considered. (See Tables at end of this section.)

5. *The arrangements for following up patients in cases in which the diagnosis is doubtful.*

In cases in which the diagnosis is doubtful at the first examination, arrangements are made for re-examination within a definite period. In the interval bacteriological examinations of the sputum are made, and if after this and re-examination there is still doubt, arrangements can now be made for screening or X-Ray examinations at Carlisle or Whitehaven.

It would certainly be of great advantage to the patient and of assistance to the tuberculosis officer if there were a few beds available in a suitable institution for observation purposes, where doubtful cases could be sent and kept under close observation, two hourly records of temperature kept, etc., which would materially help in arriving at an accurate diagnosis. In the case of non-pulmonary tuberculosis, when in doubt as to diagnosis or treatment, we have the advantage of the opinion and advice of the specialist orthopædic surgeon's visits in connection with the cripple scheme.

6. *The arrangements for securing the examination and systematic supervision of "home contacts."*

For many years now efforts have been made to examine as many contacts as possible, but until our present system was evolved in 1924 and came into effective working in 1925 little result was obtained. The majority of adults refuse examination, some because they feel "quite well," others were at work, and others for no reason or any reason at all.

With child contacts, however, the matter is simple. When the tuberculosis officer examines a notified case, he ascertains what children there are in the house and what school they attend. A note is made of the names of these children, and when the tuberculosis officer visits the school as school medical inspector he examines all the contacts as "Specials." In this way contacts are kept under observation throughout their school life.

In 1925, 519 contacts were examined; of these 31 or 6 per cent. were definitely tuberculous; 81 or 15 per cent. were doubtful or suspicious; and 407 or 78 per cent. were not tuberculous.

7. *Information as to special methods of diagnosis and treatment in use, and the number of persons to whom these special methods have been applied.*

Beyond the limited use of X-Rays, either screening or plates, and a very limited use of tuberculin in a few cases of surgical tuberculosis, there are no other special methods of diagnosis or treatment available. The stethescope must for some period yet remain our main aid to accurate diagnosis.

8. *The results of local experience as to the relative value of each form of treatment.*

As regards special forms of treatment an impartial scrutiny of results obtained by, on the one hand, Sanatorium treatment, and on the other by Colony treatment, cannot but lead to the conviction that Colony treatment is not only more lasting in its results, and if carried to its logical outcome a Village Settlement, much the most effective method of treatment in vogue at the present time. (See Dr. Mark Fraser's Report, Appendix D.)

9. *The nature and extent of any dental treatment provided by the Council for tuberculous patients.*

It is impossible with only one dental surgeon, whose whole time is devoted to the care of school children's teeth, to give much attention to other branches of dental work, but nevertheless we are greatly indebted to the School Dental Officer, Mr. Gillieron, who has on several occasions, in his spare time, given attention to tuberculous cases. Insured persons, or at any rate some of them, can now obtain dental treatment through their approved societies.

Systematic attention to the teeth of all tuberculous patients is certainly desirable, and the marked improvement that has taken place in the few cases hitherto treated is an urgent indication that much more is required.

10. *Any arrangements for the provision of nursing or extra nourishment for patients living at home.*

For many years cases of tuberculosis have been visited in their own homes and have received attention from the district nurses, by arrangement with the nursing Associations; 10/- per case per annum is paid to the Associations for this work by their nurses.

In the administration of extra nourishment we are guided by Circular 257, issued on the 3rd November, 1921, in which it is pointed out that " the expenditure on this service ranking for grant is limited to a maximum rate of £2 per annum per 1,000 of the population," which means that in 1925 the sum available for this service was £440, so that the utmost economy is necessary, and only such cases as are stated in the Circular to be suitable cases can be dealt with. These are:—

(a) Patients who have received an adequate course of sanatorium treatment and whose medical condition is such that, with the grant of extra nourishment, they may be expected to maintain or recover full working capacity; and

(b) Patients in whose cases ultimate arrest of the disease may reasonably be anticipated, and who are waiting for admission to a sanatorium.

189 grants for extra nourishment were made during 1925.

11. *The arrangements for treating non-pulmonary tuberculosis, especially tuberculosis of bones and joints in adults and children, and for the provision of surgical apparatus, etc.*

The arrangements for the treatment of non-pulmonary tuberculosis in the area chiefly apply to children.

So far as tuberculosis of bones and joints is concerned all children from birth up to the age of leaving school are dealt with under the County Cripple Scheme, under which at the monthly clinics at 4 centres these cases are reviewed, and, along with the non-tubercular cripples, are seen by the visiting staff from the Ethel Hedley Orthopædic Hospital.

Once a year a consulting orthopædic surgeon visits the County, and sees such cases as are specially selected. Tubercular children of this type are sent to the Ethel Hedley Hospital, Windermere, and the Shropshire Hospital at Oswestry for as long as may be necessary, and on discharge are taken on to the after-care list, and are seen there or otherwise, as may be necessary, by the after-care worker.

Plaster and appliances are supervised and are renewed as may be necessary under one or other of these arrangements. Special reference may perhaps be made to high boots. The necessary plaster casts are taken at the centres, and the boots are made in Carlisle by the Northampton Boot Company. They are exceedingly well made and are most reasonable in price.

The necessary X-Ray work is undertaken by two consultants, one in Carlisle and one in Whitehaven at their private houses. Tubercular glands in children receive extra nourishment in the form of milk and eggs and cod liver oil, as may be necessary, and are in special circumstances sent to Stannington Sanatorium. Cases requiring surgical treatment are dealt with at the local Infirmaries.

Financial stringency has not allowed provision to be made on any general scale for adults with surgical tuberculosis, but a number of cases have been dealt with and sent to various Hospitals, and many of these cases have received extra nourishment allowance.

It is probable that under the normal development of the cripple scheme an increasing number of adults will be dealt with, as the supervision of all tubercular cripples is as a matter of course being maintained into adult life under the cripple scheme for as long as may be necessary.

12. *The arrangements for "care" and "after-care" and their working.*

In 1922 attempts to form After-care Committees were made, but although a few were formed, no useful purpose was served, as they were quite ineffective without funds, and no money was available.

In 1923 the Local Authorities in the County were asked to form, and 13 of them did form, After-care Committees for the men who had received treatment and training in the Colony, but only one man was found employment suitable to his physical condition through the agency of these Committees.

All cases, after their period of residential treatment, are kept under supervision by the tuberculosis officers and by the nurses and health visitors.

13. *Particulars as to any local arrangements for finding employment for patients.*

Beyond the statement in the previous paragraph, no organised arrangements are in existence in the County for finding employment for patients; the tuberculosis officers are frequently in communication with various employers of labour, but most of their efforts prove futile, owing to the present state of the labour market.

14. *Statement as to the supply and supervision of shelters at the homes of patients.*

At the beginning of 1925 there were 24 open-air shelters in use at patients' own homes, and by the end of the year this number had increased to 48, all loaned free of charge. That these shelters are, in the majority of cases, appreciated and serve a useful purpose is shown by the fact that in one case a patient has had his in constant use for the last 12 years.

Patients living or sleeping in the shelters are periodically visited by the tuberculosis officers, but it was found that in many cases so little care was taken, and many of the shelters were allowed to get into such a dilapidated condition, that many of them became, in a very short time, unfit to sleep in. The County Architect was therefore asked to arrange for their periodic inspection so that slight repairs could be undertaken as soon as noticed. A marked improvement in their condition has resulted. The increase in the number of shelters after the closure of Englethwaite was due to those at the Colony being brought into use in the County at the patients' own homes. Beds, bedding, &c., previously in use at the Colony were lent to the patients using these shelters.

15. *Any special points noted locally as to the incidence of tuberculosis (e.g. occupation).*

The accompanying table showing the death-rates per 1,000 of population from pulmonary tuberculosis in each of the Sanitary Districts for the past five years does not show any marked incidence in one area over any other, but it does indicate that the highest mortality occurs in those districts in which overcrowding and poverty are most rife :—

Urban Districts.	1921.	1922.	1923.	1924.	1925.
Arlecdon & Frizington	0.5	1.1	1.9	2.0	0.6
Aspatria	0.2	0.5	—	1.3	0.5
Cleator Moor	0.9	0.9	1.0	0.7	1.1
Cockermouth	0.8	1.0	1.0	0.4	1.4
Egremont	0.4	0.4	0.5	0.5	1.1
Harrington	0.4	0.6	0.4	0.6	1.1
Holme Cultram	0.2	0.4	0.8	—	0.2
Keswick	0.7	0.9	—	0.2	1.2
Maryport	0.5	0.7	0.4	0.6	0.4
Millom	0.6	0.9	0.6	0.8	0.7
Penrith	0.9	0.8	0.4	0.9	0.6
Whitehaven	1.4	1.3	1.2	1.0	0.4
Wigton	0.8	1.0	1.1	1.0	0.8
Workington	0.8	0.3	0.6	0.6	0.5

Rural Districts.	1921.	1922.	1923.	1924.	1925.
Alston	1.8	0.3	0.7	0.7	0.4
Bootle	1.0	—	0.1	0.3	0.3
Brampton	0.4	0.6	0.5	0.6	0.6
Carlisle	1.1	0.7	0.7	0.5	0.5
Cockermouth	0.3	0.7	0.5	0.4	0.6
Longtown	0.9	0.8	0.1	0.7	1.1
Penrith	0.4	0.6	0.3	0.5	0.2
Whitehaven	0.7	0.7	0.6	0.6	0.4
Wigton	0.7	0.5	0.6	0.8	0.3

16. *Any special methods adopted or proposed for the prevention of tuberculosis.*

Hitherto, in my opinion, too much attention has been devoted to the treatment, and not nearly enough to the prevention, of tuberculosis.

The first official step towards the administrative control of tuberculosis was taken when the notification of cases of pulmonary tuberculosis in Poor Law cases was made compulsory on 1st January, 1909.

This was followed by the compulsory notification of hospital cases of pulmonary tuberculosis from 1st May, 1911, and from the 1st January, 1912, by the compulsory notification of all cases of pulmonary tuberculosis.

From the 1st February, 1913, it became compulsory to notify all cases of tuberculosis (i.e., non-pulmonary as well as pulmonary). The Sanatorium clauses of the National Health Insurance Act, 1911, came into operation on July 14th, 1912, and finally the Finance Act of 1911 provided capital £1,116,000 for the erection of Sanatoria In England and Wales.

In 1911, after very careful consideration, a provisional scheme for the *prevention and treatment* of tuberculosis was submitted to the Local Government Board, which scheme provided, inter alia, for:—

1. Dispensaries at various centres.
2. The provision of Sanatorium beds at Blencathra Sanatorium.
3. Two open-air residential schools at convenient centres for the reception of children with tubercular tendencies and in the incipient stages of the disease, and day open-air schools at the

more populous centres. This was, however, subsequently altered to 1 residential and 5 day open-air schools.

4. The appointment of tuberculosis officer or officers.

The Sanatorium clauses of the National Health Insurance Act was the starting point of the national campaign against tuberculosis, for although for many years previous to 1911 the National Society for the Prevention and Cure of Consumption had been doing useful work, the matter had never been undertaken nationally and by a Government department.

The scheme as outlined came into operation in this County in 1912, but with the important exception that open-air schools were not, and up to the present have not been, included.

In August, 1913, the provision of hospital accommodation for advanced cases was considered and sanctioned by the County Council, before, however, any forward step, except the purchase of land for the erection of a hospital, could be made—the war intervened, and for the time being put an end to all progress in this direction.

In 1919, however, it was realised that something more than Sanatorium treatment was required for the number of men returning from service suffering from tuberculosis, and so Englethwaite Hall was purchased to found a Colony for treatment and training and to provide a few hospital beds for advanced cases.

The history of this institution and the useful purpose it served are fully dealt with in the Report of the Medical Superintendent (see Appendix D).

I would here like to take the opportunity of saying how very much I personally have always felt indebted to Dr. Mark Fraser, the Medical Superintendent, for the enormous amount of work he undertook in connection with the Colony, not only medical work but also in connection with the industries and the financial and business side of the undertaking, not the least of which was the social side, which did so much to keep the men happy and contented, and after the closure of the Colony settling the majority of the men in suitable occupations.

Since 1912 the scheme for dealing with tuberculosis has not been materially altered, and a " Survey Report " is, I think, an opportune time to consider, review, and, if necessary, amend our methods.

Before, however, making any suggestions, it will be necessary to consider our present position, and in the following table will be found the number of cases of pulmonary and non-pulmonary tuberculosis on the register at the end of 1925 in each sanitary district. It also shows the rate of notification per 1,000 of population :—

Urban Districts.	Pulmonary.		Non-Pulmonary.		Notifications per 1000 of popn.
	M.	F.	M.	F.	
Arlecdon & Frizington	9	5	7	5	8.2
Aspatria	8	12	4	5	7.9
Cleator Moor	35	20	11	5	8.5
Cockermouth	5	3	1	3	2.5
Egremont	23	10	3	3	5.5
Harrington	7	7	1	4	4.1
Holme Cultram	4	6	6	4	4.1
Keswick	3	3	0	2	2.0
Maryport	11	15	7	7	3.5
Millom	21	23	5	9	6.6
Penrith	16	22	3	4	5.4
Whitehaven	97	85	23	13	10.5
Wigton	8	6	3	4	5.6
Workington	57	32	5	10	3.8
Rural Districts.					
Alston	4	2	—	—	2.2
Bootle	5	4	—	1	1.6
Brampton	6	5	1	1	1.5
Carlisle	9	8	5	1	2.0
Cockermouth	36	37	13	15	4.3
Longtown	10	6	2	1	3.0
Penrith	13	12	—	—	2.0
Whitehaven	18	14	6	10	3.1
Wigton	19	19	6	1	3.9
Totals	424	356	111	108	
	780		219		

The accompanying graph shows the death-rate per 1,000 of population in the Administrative County from pulmonary tuberculosis each year from 1908 to 1925, and it shows that there has been a considerable and steady decline in this rate, but are we justified in claiming that the reduction is due to the methods adopted to combat the disease?

The graph shows that in 1908 the death-rate from pulmonary tuberculosis was 1 per 1,000 of population; the following year it had dropped to 0.7 per 1,000, this, be it noted, before any official scheme for treatment of the disease was in operation.

From 1910 to 1918 the death-rate was above this figure (0.7), and it will be noted that in only three years, viz., in 1920, 1924, and 1925, has it been below 0.7; in these years it fell to 0.6 per 1,000.

Death returns, however, do not give us much accurate information with regard to the incidence of the disease. We must therefore turn to the notifications received and consider them; but for many years after notification became compulsory it is obvious that the numbers notified must have been much in excess of the new cases arising and that other inaccuracies must have crept in. I do not therefore give the figures for more than the five years covered by this Survey Report.

Pulmonary Tubelrculosis.

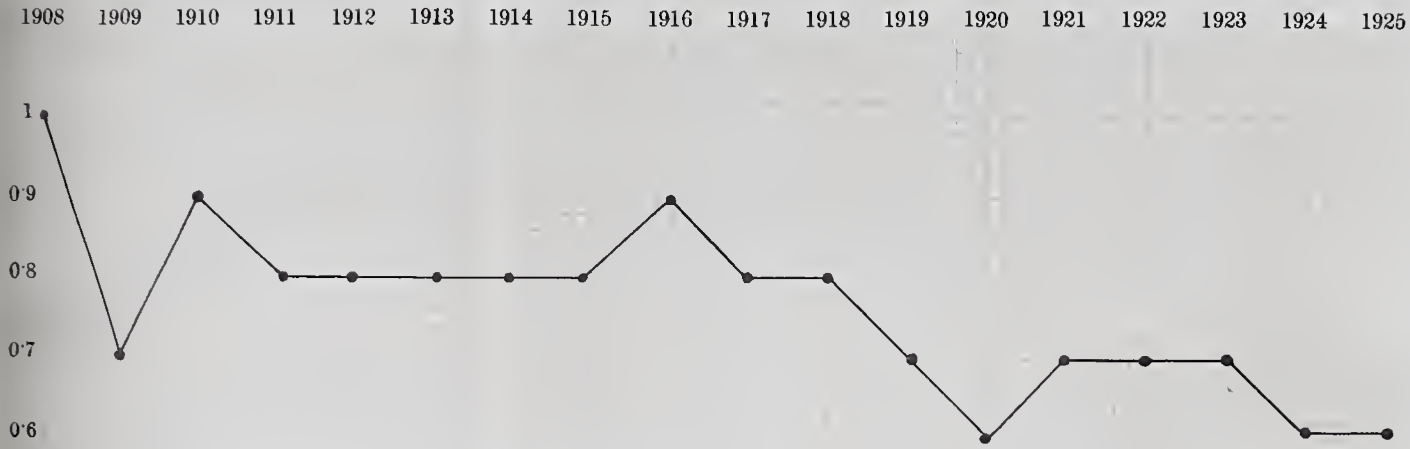
In 1921 215 cases were notified.
In 1922 207 ,, ,, ,,
In 1923 247 ,, ,, ,,
In 1924 261 ,, ,, ,,
In 1925 253 ,, ,, ,,

Non-pulmonary Tuberculosis.

In 1921 40 cases were notified.
In 1922 69 ,, ,, ,,
In 1923 72 ,, ,, ,,
In 1924 76 ,, ,, ,,
In 1925 79 ,, ,, ,,

In the case of non-pulmonary tuberculosis it may be that the increase—almost double within the last five years—in notifications is, at any rate, partly due to the activities of the cripple scheme. Every effort has been made to find crippled children, and but for the cripple

GRAPH SHOWING DEATH-RATE FROM PULMONARY TUBERCULOSIS EACH YEAR FROM 1908 TO 1925.



scheme there can be no doubt that many of these cases would never have been brought to light.

Although the death-rate shows a tendency in recent years to decline, and there is a distinct downward tendency throughout the country, the notification returns show an upward tendency, indicating that the spread of the disease is not being checked.

This being so, the question at once arises: Are we getting value for the money expended in the treatment of tuberculosis? What have been the results of treatment?

During the five years 370 cases have been treated in Blencathra Sanatorium. Of these:—

152 are now dead.
30 have left the districts and cannot be traced;
188 are still alive.

So that of the 340 of whom we can get a record, nearly 45% are dead, and in making this statement it must be remembered that the numbers include many who have received treatment within a very recent period, and that some received further and prolonged treatment at Englethwaite, without which the death-rate would have been much higher.

During the same period 131 children have received treatment in Sanatoria. Of these:—

10 are dead;
6 have left the district and cannot be traced;
115 are still alive.

Of the 125 of whom we have a record, therefore, 8% are dead.

In stating these facts, I am not in any way criticising Blencathra as a Sanatorium. The causes of such poor results must be looked for outside the Sanatorium, and I believe the principal are:—

1. Delay in seeking medical advice on the part of the patient.
2. Too late notification of the case, and as a consequence
3. Too late application for treatment in the Sanatorium.
4. A failure on the patient's part to recognise his or her responsibilities in the matter of treatment and prevention.

5. In a large majority of the cases inability of the patients to obtain the necessary domestic care and attention after treatment in a Sanatorium.

As regards notification, my returns show that there were 182 deaths (a difference of 22 between these figures and those received from the Registrar-General) from tuberculosis in 1925.

Of these 41 were not notified prior to death, and the remainder were notified in the periods set out below:—

23 were notified from 1 to 7 days before death.
3 ,, ,, ,, 8 to 14 ,, ,, ,,
4 ,, ,, ,, 15 to 30 ,, ,, ,,
29 ,, ,, ,, 1 to 3 months ,, ,,
14 ,, ,, ,, 4 to 6 ,, ,, ,,
22 ,, ,, ,, 7 to 12 ,, ,, ,,
21 ,, ,, ,, 1 to 2 years ,, ,,
25 ,, ,, ,, Over 2 ,, ,, ,,

In many cases, even when notified early, the patient is unwilling to accept the Sanatorium treatment because he is still able to work, or a mother is unable to leave her family, " does not feel ill enough," or his financial position is such that he cannot afford to stop work unless some provision, which he is unable to make, is arranged for his family. But even people with no dependents to provide for refuse Sanatorium treatment for one reason or another.

Although the immediate results of Sanatorium treatment are excellent and most patients return home feeling and looking infinitely better, with the physical signs all but gone, in a very short time they begin to fall back into their original condition. It is regrettable but nevertheless true that most people are under the false impression that a few months' residence in a Sanatorium is sufficient to arrest a disease such as pulmonary tuberculosis and that it will enable them to return to their own homes, resume their old occupations, and even their old habits at once.

The fallacy of this is, of course, pointed out on all occasions, and before they leave the Sanatorium, but it is exceedingly difficult to get any but the bare minority to believe that the utmost care and the most persistent effort is necessary, over a considerable period, if their condition is to be improved or even maintained.

Do these results justify the expenditure? In the five years ended the 31st March, 1926, there has been expended on the treatment of cases of pulmonary tuberculosis in institutions:—In Blencathra for adults £16,217, and in Stannington for children £5,859, a total sum of £22,076.

If so there is nothing further to be said, but in my opinion we are certainly not getting, in the case of adults, an adequate return for money, either in the way of cure or prevention.

In dealing with tuberculosis we have to make provision for two distinct and utterly different types of case, viz., pulmonary (affecting the lungs) and non-pulmonary (affecting other parts of the body, e.g., bones, joints, glands, &c.).

Speaking generally it can be said that non-pulmonary tuberculosis arises from bovine sources (milk is almost the only—certainly the most important—source of tuberculosis of bovine origin), and that pulmonary tuberculosis arises from infection from human beings, either by direct contact, such as kissing, or more commonly through infection in the air either in dust or in spray from coughing.

In considering the prevention and treatment of tuberculosis—whether pulmonary or non-pulmonary—there are certain fundamental facts which must be borne in mind by those who have the responsibility of formulating schemes and putting them into effect.

In order, therefore, that the reasons for any recommendations made, either for prevention or treatment, may be understood, it will be necessary to consider the cause of tuberculosis and how it finds access to the bodies of its victims.

The cause of all tuberculosis, whether pulmonary or non-pulmonary, and whether it arises from human or bovine sources is the tubercle bacillus (the germ of consumption) discovered by Koch in 1882.

It is probable that the primary infection of tuberculosis is acquired early in life, and that the appearance of the disease in adult life is a late manifestation of the infection thus acquired.

About 100 years ago tuberculosis was a disease almost unsuspected below the age of puberty, but has now come to be regarded not only as the commonest of all diseases affecting childhood, but practically as a universal disease of the poorer classes.

It has been shown by fairly reliable tests that by the third year of life 20%, between the ages of 7 and 8 70%, and by the age of 14 90% of children have had tuberculosis.

It is so exceedingly rare for a baby to be born with tuberculosis that for all practical purposes it may be said not to exist, but on the other hand there is a distinct type of child which is remarkably susceptible to the infection of tuberculosis, and such children offer but feeble resistance to a fatal extension. Such children include those who died from congenital debility, atrophy, marasmus, &c., generally within the first six months of life.

Although the mortality rate of very young children infected with tuberculosis is enormously high, it rapidly sinks as the child reaches its third year, and from that time till adolescence it remains low.

According to some authorities the mortality rate among children infected during the first two months of life is 100%. At the end of the first year it is 50%. At the end of the second year it is 20%, and from the fourth year onwards probably remains at as low a figure as 2%.

We may therefore conclude that children are highly susceptible, but with the exception of the first two years of life little liable to fatal results, and that all infection is acquired in early life.

Infection in practically all cases is taken into the system either through the nose or mouth, i.e., is either inhaled or swallowed. Whichever way the infecting material is taken in, the first parts of the body infected are the lymphatic glands, but what causes, at a later date, the spread of the disease to any particular part or parts of the body is as yet an unsolved problem. It is, however, certainly known that certain diseases, measles, whooping couch &c., are intimately associated with it.

Nor do we yet know why one gland, or chain of glands, should be selected in preference to any other. We do, however, know that certain sets of glands are liable to become inflamed and enlarged from other causes, e.g., a child suffering from chronic bronchitis, or " one cold on the top of another " very soon gets the gland at the root of the lungs inflamed and enlarged. The glands in the neck frequently become enlarged from such simple things as sores on the head or irritation from verminous conditions, other glands become enlarged because of the presence of tonsils and adenoids, bad teeth, &c., &c., and we know that glands once enlarged and inflamed from any cause are very susceptible to the invasion of the tubercle bacillus. May we not, therefore, reasonably conclude that when the tubercle bacilli are wandering round at large in the system they select as their habitat the glands that are already inflamed from any cause, and it is well known that the glands most frequently affected are those in connection with the nose and mouth, the passages through which we know the tubercle bacillus gains its entrance to the body.

Infection in the glands may lie dormant for years, without producing sign or symptom, only waiting till the resistance of the body is lowered from any cause to launch its attack, and then the fight begins between the tubercle bacillus and the resistance of the tissues.

Knowing then that practically all children have been infected with tuberculosis, and knowing further that many of the so-called minor ailments of children, more particularly measles and whooping cough, are often the precursors of an acute tuberculosis, does it not clearly indicate on what lines preventive and curative measures should be carried out?

If money were no object the eradication of tuberculosis would be a comparatively simple matter, and one which could be accomplished in a comparatively short time. Money, however, being our prime motive power, the methods selected must be those which will give us the greatest possible result for the least expenditure. But one thing is quite certain: if tuberculosis is to be eradicated money will have to be spent, and spent freely, whatever method is adopted.

If then money were no object I would suggest the following as a complete scheme for the cure and prevention of tuberculosis:—

1. The production and distribution of a milk free from tubercle bacilli.
2. Better housing, including the abolition of all unfit houses and overcrowding of houses on area.

3. Open-air schools for all children, with residential schools for " delicate " children and convalescent homes for ailing children.
4. Sanatorium treatment for all suitable cases of tuberculosis.
5. A selection of ex-Sanatorium cases for Colony treatment.
6. Hospital treatment for all cases beyond the Sanatorium stage.
7. Hospital beds for the treatment of surgical tuberculosis.
8. A great extension of tuberculosis dispensaries in order that many more examinations of " contacts " and those wishing for medical examination could take place.
9. The free use of open-air shelters *at* patients' own homes.

As, however, money is the governing factor and schemes have to be formulated in accordance with the amount available, we must select those methods which are likely to give us the greatest return for what we spend.

The question of milk is dealt with elsewhere in this Report.

Housing also has been dealt with, but the elimination of unhealthy areas is a question which demands the urgent attention of all Sanitary Authorities.

It is clearly impossible to extend our dispensary system at the present time, and the small Colony which did such good work and promised so much for the future has had to be abolished, so that all that remains is to consider whether we can so modify our scheme as to give better permanent results in the way of cure or arrest of the disease and more hope of prevention in the future.

Hitherto cases in practically all stages have been admitted to the Sanatorium when there was even a faint hope of temporarily arresting the disease. Hence our poor results. This is not the fault of the Sanatorium, but of the system.

I suggest that admission to the Sanatorium be strictly limited to cases in which there is good hope of permanently arresting the disease.

This would enable each case to remain a much longer time in the Sanatorium, it being, in my opinion, a much sounder proposition to cure a few than to patch up a lot. In order to ensure that a cure once begun in a Sanatorium may continue, I would further suggest that all Sanatorium cases should be offered a "refresher" course of about one month in the Sanatorium once or possibly twice a year, extending over as many years as the tuberculosis officer might consider necessary. This would have the double effect of maintaining the patient's physical condition as well as reminding them that great care and effort on their part was still necessary.

It will be necessary to provide some hospital beds for advanced cases, and this question is at the present time under consideration. It will not, however, be possible, nor will it be necessary, to isolate all advanced cases, provided proper precautions are taken and instructions for preventing infection implicitly followed. It will only be necessary to isolate these cases from overcrowded areas or where there is a large family in a small house. The tubercle bacillus is so universally present that it is a vain hope to exterminate tuberculosis from our midst by the destruction of all infective material and to do away altogether with the possibility of contact between the child and the tubercle bacillus.

As has already been pointed out, children under two years of age are extraordinarily susceptible to infection, and the younger the child infected the more likely is the infection to prove fatal. So that when an infant is living in a house with any relative suffering from tuberculosis, with tubercle bacilli present in the sputum, that infant is almost bound to become infected, more especially if the relative suffering is the mother.

Knowing this, would it not be a wise measure of prevention to remove that child from the risk of an almost certain infection on some such system as is adopted in the Grancher Institute in Paris, where infants and young children are removed from tubercle infected houses and placed with healthy foster-parents in the country? This, in my opinion, would be much more effective than isolating advanced cases. It would be instructive to compare the relative costs of the two methods.

That it would be effective, if practicable, we can safely assume, as the same system applied by Bang to cattle in

Denmark has practically eliminated tuberculosis from the herds in that country.

Our greatest hope lies in so raising the resistance of the child as to enable it to overcome the small doses of infection which almost every child must necessarily—under present conditions—receive, and taking all precautions to guard it against those massive infections which no resistance can overcome, rather than in hoping to eliminate all sources of infection.

I have already mentioned that the original scheme submitted to the Local Government Board in 1911 included the provision of open-air schools.

The great and fundamental requirements of child life are fresh air, good wholesome but plain food, taken at regular intervals, regular and long hours of sleep, and properly regulated exercise in the open air. If these are required for healthy children, how much more are they required for delicate, ill-nourished children, whose condition is due, in large measure, to the lack of all or many of these in their own homes? In an open-air school all these necessities would be provided, with, at times, the possible exception of sunlight, in which case artificial sunlight treatment would be provided to make up the deficiency.

The matter of open-air schools has been dealt with and considered on many occasions, but so far nothing has materialised. I am not advocating a new experiment; open-air schools are not new, and they are long past the experimental stage. In fact, it is not too much to say that any Education Authority would be well advised to convert all their schools into modified open-air schools, and certainly that all new schools should be built on this principle. The children would benefit from a medical and an educational standpoint, and the community would benefit by a raised standard of health, a lower rate of infection, and above all a real method of prevention, which in years to come would show results infinitely greater than our present method is ever likely to do.

In any case, whether our existing methods are altered on the lines suggested or not, I would recommend that more money be devoted to the treatment of non-pulmonary or surgical tuberculosis, and that arrangements be made with various hospitals for such treatment. That such treatment is urgently required is evident from the fact that at the present time:—

There are 43 cases on the register.
,, ,, 12 ,, in hospital.
,, ,, 6 ,, awaiting hospital.
,, ,, 25 ,, on the After-care list.

It is obvious, too, that many of these cases cannot be treated at home because it is necessary to keep many of them in bed for such prolonged periods, e.g., the average length of stay in hospital for

Tuberculous spines is 1 to 2 years;
,, hips is 9 months to 1 year;
and other cases from 3 months to a year.

The results obtained by treatment of these cases are excellent, and money so spent gives a good return.

By such re-arrangement of methods I do not consider that we would be committed to any increase in expenditure, but I do consider that the ultimate results would far exceed the results which we get at present.

It simply resolves itself into this: Are we to continue our present methods, which are doing little or nothing in the way of prevention, and only prolonging the lives of a few by a short period, or are we to treat the children with the main object of preventing them, later on, swelling the ranks of the actively tuberculous?

To sumarise this, I suggest:—

1. The treatment in Sanatorium of only early cases.
2. Treatment of all suitable children in an open-air residential school.
3. More hospital treatment of surgical tuberculosis.
4. Removal of advanced cases—without sufficient accommodation at home—to hospital, or removal of children from infective surroundings.

Memo. 37/T.: Table I.). Form T.53.

TUBERCULOSIS SCHEME OF THE CUMBERLAND COUNTY COUNCIL.

Return showing the work of the Dispensary (or Dispensaries) during the year 1925.

A.—New Cases examined during the year (excluding contacts):—	
(*a*) Definitely tuberculous	191
(*b*) Doubtfully tuberculous	
(*c*) Non-tuberculous	
B.—Contacts examined during the year:—	
(*a*) Definitely tuberculous	31
(*b*) Doubtfully tuberculous	81
(*c*) Non-tuberculous	407
C.—Cases written off the Dispensary Register as	
(*a*) Cured	21
(*b*) Diagnosis not confirmed or non-tuberculous (including cancellation of cases notified in error)...	
D.—Number of Persons on Dispensary Register on December 31st:—	
(*a*) Diagnosis completed	448
(*b*) Diagnosis not completed	
1.—Number of persons on Dispensary Register on January 1st	485
2. Number of patients transferred from other areas and of " lost sight of " cases returned	—
3. Number of patients transferred to other areas and cases " lost sight of "	110
4. Died during the year	79
5. Number of observation cases under A (*b*) and B (*b*) above in which period of observation exceeded 2 months ...	—
6. Number of attendances at the Dispensary (including Contacts)	2071
7. Number of attendances of non-pulmonary cases at Orthopædic Out-stations for treatment or supervision	41
8. Number of attendances, at General Hospitals or other Institutions approved for the purpose, of patients for	
(*a*) " Light " treatment	—
(*b*) Other special forms of treatment	—
9. Number of patients to whom Dental Treatment was given at or in connection with the Dispensary ...	—
10. Number of consultations with medical practitioners:—	
(*a*) At Homes of Applicants	91
(*b*) Otherwise	
11. Number of other visits by Tuberculosis Officers to Homes	472
12. Number of visits by Nurses or Health Visitors to Homes for Dispensary purposes	1434
13. Number of	
(*a*) Specimens of sputum, &c., examined	182
(*b*) X-ray examinations made in connection with Dispensary work	—
14. Number of Insured persons on Dispensary Register on the 31st December	—
15. Number of Insured Persons under Domiciliary Treatment on the 31st December	105
16. Number of reports received during the year in respect of Insured Persons:—	
(*a*) Form G.P. 17	96
(*b*) Form G.P. 36	80

(Memo. 37/T.: Table II.). Form T.54.

TUBERCULOSIS SCHEME OF THE CUMBERLAND COUNTY COUNCIL.

RESIDENTIAL INSTITUTIONS.

(*A*) Average Number of Beds Available for Patients during the year 1925.

		Pulmonary Tuberculosis.		Non-Pulmonary Tuberculosis.		
	Observation.	"Sanatorium" Beds.	"Hospital" Beds.	Diseases of Bones & Joints.	Other Conditions.	Total.
Adult Males Adult Females	—	65	—	—	—	65
Children (under 15)	—	10	—	6	—	16
Total	—	75	—	6	—	81

(*B*) Return showing the Extent of Residential Treatment during the year 1925.

			In Institutions on Jan. 1.	Admitted during the year.	Discharged during the year.	Died in the Institution.	In Institutions on Dec. 31.
Number of Patients	Adults	M.	45	70	101	1	13
	,,	F.	13	31	39	—	5
	Children	M.	9	22	21	—	10
	,,	F.	11	18	18	—	11
	Total		78	141	179	1	39

Table III.

RETURN showing the Immediate Results of Treatment of Patients Discharged from Residential Institutions during the Year 1925.

	Condition at time of Discharge.	Duration of Residential Treatment in the Instit.												Total.
		Under 3 months.			3—6 months.			6—12 months.			More than 12 mths.			
		M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	M.	F.	Ch.	
Pulmonary Tuberculosis.	Quiescent	—	—	—	—	1	—	—	1	—	—	—	—	2
	Improved	9	6	—	42	25	21	16	2	4	12	—	2	139
	No Material Improvement ...	7	2	—	5	2	1	7	—	1	2	—	—	27
	Died in Institution	—	—	—	—	—	—	—	—	—	1	—	—	1
Bones and Joints.	Quiescent or Arrested	—	—	—	—	—	—	—	—	—	—	—	—	—
	Improved	—	—	4	—	—	2	—	—	4	—	—	—	10
	No Material Improvement ...	—	—	—	—	—	—	—	—	—	—	—	—	—
	Died in Institution	—	—	—	—	—	—	—	—	—	—	—	—	—
Abdominal.	Quiescent or Arrested	—	—	—	—	—	—	—	—	—	—	—	—	—
	Improved	—	—	—	1	—	—	—	—	—	—	—	—	1
	No Material Improvement ...	—	—	—	—	—	—	—	—	—	—	—	—	—
	Died in Institution	—	—	—	—	—	—	—	—	—	—	—	—	—

ENGLETHWAITE INDUSTRIAL COLONY.

Report for 1925-26.

Mark S. Fraser, M.D., D.P.H., F.R.C.S.E.
(Medical Superintendent).

The Colony financial year ended on the 31st March of each year, and the Annual Reports have always been made up to that date; so a full report for the year 1924-25 has already been published. Although the Colony was officially closed on November 14th, 1925, it was not till 31st March, 1926, that the Colony accounts were made up and the cash books, etc., closed.

This Report accordingly covers all matters relating to Englethwaite up to the end of the financial year 31st March, 1926.

1. Medical.

The Colony being officially closed for treatment purposes on November 14th, 1925, the period under consideration at the moment is from April 1st, 1925, to November 14th, 1925.

During that time the average number of beds occupied was 27.

Conditions being what they were, this figure may be regarded as highly satisfactory, being only 7 less than that of the previous year, besides making it possible for the Colony to be usefully carried on till its closure.

It would have been a very unsatisfactory state of affairs for all concerned had the Colony been allowed to remain in existence till perhaps only 12 or 15 beds were occupied.

At the beginning of the financial year, 1st April, 1925, 27 Colonists were in residence, and during the year 22 new cases were admitted, so that in all 49 men received treatment and training throughout the period.

Of this number 9 were Cumberland ex-Service men, 2 were ex-Service men from other areas, and the remaining 38 were Cumberland civilians.

It may here be mentioned that a large percentage of the 27 Colonists who were already under treatment on 1st April, 1925, had completed a full period of treatment before they left, and, as previously stated, all the men who were finally discharged on 14th November, 1925, had received a satisfactory period of treatment at the Colony.

The physical conditions of the above-mentioned 49 men on admission were classified as follows:—

Pulmonary.

1. Early	13 cases
2. Intermediate	26 cases
3. Advanced	10 cases

From these figures it will be seen that many were not typical Colony cases, some being Sanatorium cases and others advanced cases.

In spite of this the results of treatment for the period were, on the whole, very satisfactory. Many of the Colonists were discharged fit for work or light work, and the others materially benefited by their stay at Englethwaite.

The following Table shows the state of the men's health at the time of their discharge:—

Fit for work	18
Fit for light work	17
Condition improved	6
Condition unchanged	3
Condition worse	5
	49

2. Industries.

The intention here is to give a brief outline of the working of the Industries during 1925-26. The whole question of Industries will be dealt with in the Summary Report.

The loss on the combined Industries is largely due to the fact that in November, 1925, the stock and equipment of the Poultry Farm and Joinery and Clogging Departments were sold by auction. Although the prices obtained were, on the whole, good, the sum realised fell far short of the valuation placed by the Valuators on the stock at the end of March, 1925, and carried forward as assets of the various Industries.

This valuation estimate was, naturally, materially lowered by the circumstances of a forced sale. The same financial loss fell upon the Market Garden when the horses and equipment were sold early in 1926. To give one example only—a horse which was valued at £35 realised only £12 when sold in the Auction Market because on the day in question there was a very large number of horses for sale and very few buyers.

(1) THE MARKET GARDEN.

The area under cultivation was approximately 10 acres, 3 of which were sown down to corn and permanent pasture. The crops taken as a whole were good, especially the potato crop. Before the Colonists left all the crops had been taken up but were unsold.

By retaining three or four staff men till the end of January, 1926, it was possible to clear the grounds of rubbish, such as broken posts in the ground, odd pieces of wire-netting, etc.

The potatoes also were carefully picked over and sold by arrangement with a local farmer early in 1926. All the cultivated land, with the exception of the original gardens and a small additional piece of ground, was sown down to corn and permanent pasture. The agreement was that the farmer should prepare the land and sow his own corn, the seeds mixture being supplied by the County Council according to its own formula, and thereafter he should reap the crops for his own benefit.

By this arrangement the County Council were saved all expense apart from a small sum expended on seeds, and had the satisfaction of knowing that its ground was put back to permanent pasture by an experienced farmer.

(2) THE POULTRY FARM.

There is little of special interest to note in connection with the Poultry Farm except that the prices obtained at the sale for the poultry were not so good as had been anticipated, whereas the prices obtained for the wire-netting, poultry-houses, and equipment were considered unusually good.

(3) JOINERY.

This department was closed at the end of May, 1925, because very little work could be obtained. Apart from repairs to shelters, furniture, etc., no important work was latterly carried out.

Finance.

The appended Income and Expenditure Sheets include all payments and receipts up to the end of the financial year, and do not call for special remarks, except that all outstanding debts to the Colony were recovered in full.

ENGLETHWAITE INDUSTRIAL COLONY.

INCOME. YEAR ENDED 31ST MARCH, 1926.

	Actual Cash Receipts.			*Other Credits.*			*Total.*		
MAINTENANCE.	£	s.	d.	£	s.	d.	£	s.	d.
Ministry of Health (Discharged Soldiers and Sailors)	950	0	0	—			950	0	0
Maintenance of Patients from Outside Areas	78	6	1	—			78	6	1
Other Receipts	62	8	10	—			62	8	10
MAINTENANCE OF OUTDOOR STAFF.									
Credit to Provisions	—			53	15	10	53	15	10
,, Fuel, Light & Cleaning	—			3	3	4	3	3	4
,, Rent, Rates, and Taxes	—			6	6	7	6	6	7
INDUSTRIES.									
Market Garden	366	0	10	300	15	0	666	15	10
Poultry Farm	713	2	11	51	15	1	764	18	0
Clog-making	28	12	1	—			28	12	1
Joinery	154	2	0	13	16	0	167	18	0
Total	£2352	12	9	£429	11	10	£2782	4	7

ENGLETHWAITE INDUSTRIAL COLONY.

EXPENDITURE. YEAR ENDED 31ST MARCH, 1926.

COST OF MAINTENANCE.	£	s.	d.	£	s.	d.	£	s.	d.
	Actual Cash Payments.			*Other Charges.*			*Total Charge for year.*		
Provisions	846	9	10	125	16	9	972	6	7
Fuel, Light & Cleaning (including Laundry)	399	16	5	15	2	0	414	18	5
Repairs—Buildings	113	0	5	8	3	9	121	4	2
Repairs—Machinery	21	13	4		—		21	13	4
Furniture, Bedding & Kitchen Appliances	39	13	10	1	8	3	41	2	1
Drugs and Appliances	8	1	5		—		8	1	5
Rent, Rates, Taxes and Insurance	72	11	9		—		72	11	9
Travelling Expenses of Medical Superintendent	25	0	0		—		25	0	0
Travelling Expenses of Staff	4	2	1		—		4	2	1
Travelling Expenses of Patients	0	1	9		—		0	1	9
Printing, Advertising, and Office Expenses	133	7	8		—		133	7	8
National Insurance	13	15	9		—		13	15	9
Superannuation	36	9	3		—		36	9	3
Other Payments	11	0	1	4	0	8	15	0	9
Hospital Grounds	83	6	8	16	16	4	100	3	0
House Porter	77	9	5		—		77	9	5
Loan Charges	742	10	7		—		742	10	7
SALARIES.									
Medical Superintendent (Proportion)	250	0	0		—		250	0	0
Matron and Nurses	213	15	5		—		213	15	5
Domestic Staff	201	11	3		—		201	11	3
COST OF INDUSTRIES.									
Market Garden	554	19	1	576	4	6	1131	3	7
Poultry Farm	551	8	10	609	8	10	1160	17	8
Clog-making	1	5	0	71	16	2	73	1	2
Joinery	93	8	6	109	17	7	203	6	1
Total	£4494	18	4	£1538	14	10	£6033	13	2

PUBLIC HEALTH (VENEREAL DISEASES) REGULATIONS, 1916.

Report of the Assistant Medical Officer of Health (Venereal Diseases) for the Year ended 31st December, 1925.

(1) *Details of the Council's Scheme.*

The Scheme of the Council for diagnosis and treatment of Venereal Diseases consists of:—

(a) The free provision to medical practitioners of facilities for obtaining pathological reports on blood and morbid products from patients infected, or suspected of being infected, with Venereal Disease.

(b) Provision of approved Arsenobenzol Compounds free to such medical practitioners as have satisfied the Medical Officer of Health that they are qualified to receive them under Section (2) of the Local Government Board Circular of the 29th August, 1916.

The County Council will supply to medical practitioners, free of charge, approved Arsenobenzol Compounds for the purpose of administration to patients, but the Ministry of Health intimates that these drugs shall only be supplied to medical practitioners who can produce satisfactory evidence of training or experience in the administration of these drugs. The County Medical Officer of Health is, therefore, required to satisfy himself that the applicant is a registered practitioner who possesses one or other of the following qualications:—

(1) holds a certificate of having satisfacfactorily fulfilled the duties of clinical assistant in a Hospital Department recognised by the Ministry of Health in connection with a Local Authority's Scheme for the diagnosis and treatment of venereal diseases in their communicable stages;

(2) holds a certificate of satisfactory attendance at a course of instruction in the diagnosis and treatment of venereal diseases (including intravenous medication) in such a Hospital Department or in a recognised Medical School or Post-graduate College;

(3) is, or has been within the last five years, a member of the permanent staff of a Hospital managed by a Committee, and containing not less than 50 beds;

(4) produces satisfactory evidence, other than that indicated in the foregoing paragraphs, that he has had adequate experience in the administration of these drugs by intravenous injection.

A practitioner desirous of having his name placed on the list for the gratuitous supply of approved Arsenobenzol Compounds must, *previous to being supplied with the drugs*, apply to the County Medical Officer of Health for a Form on which to give evidence of his or her training or experience in the administration of these drugs. The Form should then be returned to the County Medical Officer of Health, County Health Department, The Courts, Carlisle.

At the present time the following drugs have been approved:—

Arseno-Argenticum
Arsenobenzol (Corbiére)
Arsenobillon
Diarsenol
Galyl Powder
Kharsivan
*Kharsulphan
Neokharsivan
Neo-Salvarsan (Boots)
Neo-Salvarsan (Henry)

Novarsan
Novarsenobenzol (Corbiére)
Novarsenobillon
Salvarsan (Boots)
Salvarsan (Henry)
Sodium Salvarsan
Silver Salvarsan
Stabilarsan
xSulfarsenol

* The Minister of Health is advised that Kharsulphan which is intended for subcutaneous or intramuscular use should not be used for intravenous injections.

x The Minister of Health is advised that the best therapeutic effects are obtained if sulfarsenol is administered subcutaneously, and it is suggested that some other approved preparation should be used if intravenous injections are preferred.

(c) The establishment of Treatment Centres at such places in the County as the Council, with the approval of the Ministry of Health, may consider suitable.

(d) The appointment of a Specialist Medical Officer.

(e) Propaganda with the object of preventing the spread of Venereal Diseases and encouraging infected persons to obtain treatment.

(2) *The Extent to which the Scheme has been Developed.*

Pathological examinations of blood and other specimens are carried out at the Manchester Public Health Laboratory. Outfits for collecting specimens are provided, on application, free of charge to any practitioner in Cumberland, and are replaced when used.

Arsenobenzol Compounds approved by the Ministry of Health are supplied free, on application, to those practitioners whose names are on the list kept by the County Medical Officer of Health.

Treatment Centres have been opened at the Cumberland Infirmary, Carlisle, and the Whitehaven and West Cumberland Infirmary, Whitehaven, and in necessitous cases railway or bus fares to the nearest clinic are paid.

Clinics are held there as follows :—

Monday, 2-30 p.m.	Cumberland Infirmary
Wednesday, 2-30 p.m. & 6 p.m:	Cumberland Infirmary
Thursday, 5-30 p.m. & 6 p.m.	Cumberland Infirmary
Friday, 2 p.m. & 5 p.m.	Whitehaven & West Cumberland Infirmary

In addition, at the Cumberland Infirmary intermediate treatment is provided daily, except Sunday, at 6 p.m., under the supervision of the Medical Orderly.

There is also provision for the admission in case of emergency of one patient, male or female, to the Cumberland Infirmary.

The Assistant Medical Officer (Venereal Diseases) is in charge of both treatment centres, and in the case of patients unable to attend them meets the Medical Attendant in consultation when asked to do so.

From time to time lectures have been given and posters have been displayed in most of the centres of population in the County.

INTERNATIONAL AGREEMENT FOR THE TREATMENT OF SEAMEN SUFFERING FROM VENEREAL DISEASE.

In accordance with the Ministry's recommendation (Circulars 634 and 635 of the 17th November, 1925) notices stating the hours and places at which clinics are held in Cumberland and at Barrow-in-Furness have been printed and are available for the use of Port Medical Officers for distribution to the crews of ships.

Books in which are entered notes of the case and treatment given (Form V44) are kept in stock at each treatment centre for issue to seamen. Instructions in these are printed in English and French.

(3) *The Adequacy of the Provisions Made.*

With regard to pathological specimens and Arsenobenzol Compounds, the provisions made are satisfactory.

The Cumberland Infirmary treatment centre is satisfactory as an out-patient clinic, but the accommodation for in-patients is inaedquate in many ways, e.g., the room available is small and dark and can only be treated by an open fire. It is one of the rooms ordinarily in use in the out-patient clinic and is isolated from any ward, so that proper supervision is difficult. No bathroom is provided, but there is a sink in the room. A very much better arrangement would be admission to one of the large wards in the case of a non-infectious patient or to a small side ward in proximity to other wards in the case of an infectious person.

At Whitehaven the Casualty Room and Recovery Room are in use at the new hospital for the out-patient clinic. Although the accommodation is very much better than in the old hospital building there is only the same number of rooms available, and another one is very desirable for examination and treatment of female patients. There is a prospect that this may be provided.

No provision is made for the admission of a person suffering from Venereal Disease. There is no clerical assistance for the Medical Officer, no regular assistance in dispensing, and no permanent nurse in charge. No provision is made for intermediate treatment, but as a majority of the patients do not live in Whitehaven the number who would attend would not justify the expense involved.

(4) *The Lines on which the Scheme Needs to be Extended or Modified as the Result of Experience.*

While the out-patient clinics are by far the most important part of the work, there should be at both treatment centres provision for the admission of a case when necessary, adequate nursing, and facilities for baths.

At Whitehaven there should be a sister or fully trained nurse in charge who would be permanently there, and the junior nurses in rotation could assist in order to gain the necessary experience. The trained nurse would also give clerical assistance. As there is no dispenser the present arrangement must continue.

The establishment of other out-patient treatment centres in the County, if undertaken, must be regarded as experimental. The success of a small clinic appears to depend chiefly on its situation and ease of access without publicity.

Workington, Maryport, and Penrith are the most suitable towns in which this might be tried. The nursing service would be supplied by the County Staff.

(5) *Co-operation of the Medical Profession.*

The whole-hearted support of the medical profession in the district has been given, and the facilities for treatment and diagnosis are largely taken advantage of by practitioners and by the Hon. Staff of both Hospitals.

(6) *Steps Taken to Ensure that Information as to Facilities is Readily Available.*

Information can always be obtained at the offices of the Medical Officers of Health for Cumberland and Carlisle, or at either of the hospitals where the clinics are held, or from the Assistant M.O.H. (V.D.).

Practitioners in the district are always willing to tell patients where and when to go to the treatment centres.

In addition the clinics are now well established, and information is given by patient to patient. Posters have been exhibited at various times in Carlisle, Whitehaven, and elsewhere.

(1) Information to medical practitioners is given on application, and the general arrangements are well known.

(2) In Cumberland 18 practitioners, and in Carlisle 5 practitioners, are qualified to receive free supplies of Arsenobenzol Compounds.

((3) There is no record available of the number of cases treated by free supplies of Arsenobenzol Compounds, but the number of doses issued in this way during 1925 was:—In Cumberland 28, and in Carlisle 21.

(4) The number of Wassermann Tests done for practitioners during 1925 was 184 for patients in Cumberland, and 21 for patients in Carlisle.

(5) So far as I am aware no infringement of the Venereal Diseases Act, 1917, has occurred in Cumberland or Carlisle, and no prosecutions have been instituted.

Report for the Year ended 31st December, 1925.

During the year 417 persons were dealt with at the Treatment Centres at Carlisle and Whitehaven, of whom 234 attended for the first time and 17 were re-admitted suffering from the same infection after ceasing to attend or after having been transferred to other centres in a previous year. The latter in all previous Annual Reports have been counted as new cases, so that the above figures are almost identical with those for the year 1924.

Of all cases 77 were found not to be suffering from Venereal Diseases, leaving 340, a decrease of 8 in the total number under treatment or observation for Venereal Diseases. In spite of this the attendances at the Medical Officer's Clinics increased by 585, showing a greater regularity of attendance and a diminishing tendency to cease before completion of treatment.

Areas in which patients resided.	New patients.	Total attendances—all patients.
Carlisle	97	3050
Cumberland	121	1292
Dumfriesshire	5	139
Roxburgh	1	26
Westmorland	—	3
Durham	2	2
London	2	9
Liverpool	1	1
Manchester	2	2
Staffordshire	1	1
Ireland, N.	1	1
Holland	1	1
Total	234	4527

Pathological Examinations.—See above.

Approved Arsenobenzol Compounds.—See above.

Treatment Centres.

1. *Carlisle.*

The same premises were in use at the Cumberland Infirmary, and there was no alteration in the hours of the clinics.

During the year 272 patients were dealt with, a decrease of 5. 142 attended for the first time and 15 were re-admitted, making 157, a decrease of 9. The total attendances were 3,731, a decrease of 278, but attendances at the Medical Officer's Clinics increased by 416.

509 doses of Arsenobenzol Compounds were given and 204 Wassermann Tests were done.

The attendance of persons residing in Carlisle was 3,050, in Cumberland 498, and in other areas 183.

2. *Whitehaven.*

Clinics were held at the Whitehaven and West Cumberland Infirmary at the same hours as formerly. In November, 1925, the new buildings at Whitehaven Castle were occupied, and after that time the clinics were held in the new out-patient department at the Castle. Two rooms are in use, the Casualty Room and Recovery Room, and application has been made for the use of a third room at present occupied by electrical apparatus. The Laboratory, which the Infirmary Committee offered, was found to be too small, and has not been in use.

The present arrangement of two rooms is inconvenient, but as regards lighting, heating and cleanliness the new premises are vastly superior to the old.

The number of patients dealt with during the year was 145, an increase of 6. The number of new cases, including 2 re-admitted, was 94, an increase of 6. The total attendances were 796, an increase of 169. There being no intermediate treatment, all these cases received individual attention by the Medical Officer.

292 doses of Arsenobenzol Compounds were given, and 96 Wassermann Tests were done.

All patients, except 2, coming from Manchester and Holland respectively, resided in Cumberland.

RETURN relating to all persons who were treated at the Treatment Centre Carlisle and Whitehaven during the year ended the 31st December, 1925:

	Syphilis		Soft Chancre.		Gonorrhœa.		Conditions other than Venereal.		
	M	F	M	F	M	F	M	F	M
1. Number of cases which— (*a*) at the beginning of the year under report were under treatment or observation for	50	33	2	—	58	23	—	—	110
(*b*) had been marked off *in a previous year* as having ceased to attend or as transferred to other Centres, and which returned to the Treatment Centre during the year under report *suffering from the same infection*	8	2	—	—	5	—	2	—	15
Total—Items 1 (*a*) and 1 (*b*)	58	35	2	—	63	23	2	—	125
2 (*a*). Number of cases dealt with at the Treatment Centre during the year *for the first time*	34	26	6	1	70	22	34	41	144
Total*—Items 1 (*a*), 1 (*b*) & 2 (*a*)	92	61	8	1	133	45	36	41	269
2 (b). Number of cases *included* in Item 2 (*a*) known to have received *previous treatment at other Centres* for the same infection	5	1	—	—	4	1	—	—	9
3. Number of cases which ceased to attend— (*a*) before completing the first course of treatment for	6	8	1	—	35	13	—	—	42
(*b*) after one or more courses but before completion of treatment for	6	10	—	—	—	—	—	—	6
(*c*) after completion of treatment, but before final tests as to cure of	9	6	—	—	9	5	—	—	18
4. Number of cases transferred to other Treatment Centres after treatment for	6	3	—	—	11	2	—	—	17
5. Number of cases discharged after completion of treatment and observation for	8	3	6	—	24	7	—	—	38
6. Number of cases which, at the end of the year under report, were under treatment or observation for	57	31	1	1	54	18	—	1	112
Total*—Items 3, 4, 5, and 6...	92	61	8	1	133	45	—	1	233

Total attendances of all persons at the Out-patient Clinic:—4,527.

Number of doses of Arsenobenzol Compounds administered in Out-pa Clinics, 801.

Examinations of Pathological material for:—

Wassermann Reaction	300
Spirochætes	11
Gonococcus	68
Other Organisms	20

1244

VENEREAL DISEASES IN CUMBERLAND (Excluding CARLISLE).

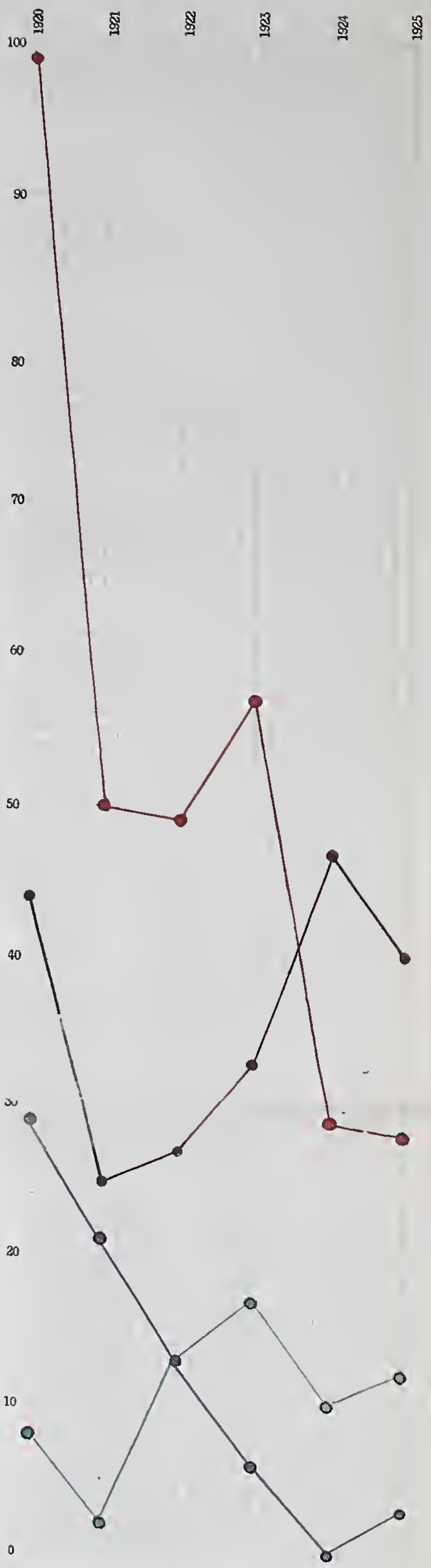
Patients attending at
V.D. Clinics and residing
in Cumberland.

RED — New Cases Syphilis.

BLACK—New Cases Gonorrhœa.

PURPLE—New Cases Syphilis contracted within six months prior to date of first attendance, i.e. recent infections.

GREEN—New Cases Congenital Syphilis.



Patients Residing in All Areas.

	1921.	1922.	1923.	1924.	1925.	Total.
New Cases Syphilis	122	120	109	64	60	475
New Cases Soft Chancre	5	2	3	11	7	28
New Cases Gonorrhœa	90	71	81	111	92	445
New Cases other than Venereal ...	65	75	72	68	75	355
Total New Cases...	282	268	265	254	234	1303
Total Attendances at Medical Officers' Clinics	3199	2768	2660	2197	2782	13606
Total Attendances for Intermediate Treatment ...	1457	1352	1600	2439	1745	8593
Total all attendances	4656	4120	4260	4636	4527	22199
Injections of Arsenobenzol Compounds ...	1098	983	855	468	801	4205

Enquiry into the Incidence of Syphilis and Gonorrhœa in Cumberland during the 6 Year Period, 1920-25.

Six years have now elapsed since the Venereal Diseases Clinics were instituted in Cumberland, and it is of great interest to note the variations in the incidents of Syphilis and Gonorrhœa.

This is graphically shown on the accompanying chart. The number of new cases of Syphilis fell from 99 in 1920 to 28 in 1925. The figure for 1920 is rather misleading, as this was the first complete year of the Clinics, and consequently the number of new cases was abnormally high. Allowing for this, the rapid decrease is remarkable.

Still more striking is the steady fall of cases of recently acquired Syphilis. Here the 1920 figure, of course, is not in any way misleading, and there is a steady decrease from 29 to 0 in 1924, rising again to 3 in 1925.

Congenital Syphilis appears to have reached its maximum in 1923 and to be now declining. New cases of this nature will naturally continue to appear for the next 20 years or so.

We can with confidence look forward to the time when Syphilis in this country will be almost a thing of the past, and those cases which do occur will be contracted for the most part abroad. In more populous areas and great cities the extermination of the disease will actually take longer than in Cumberland, but it appears to be merely a question of time. The resulting benefit to the health of the community will be enormous, and the longevity of the race will be very materially increased.

One cannot say the same about Gonorrhœa. There is no really satisfactory treatment now known for this disease, and all the efforts made to combat it merely tend to shorten the period of infectivity. Many cases are still untreated or insufficiently or improperly treated, and many cease to attend before they are rendered non-infective.

MATERNITY AND CHILD WELFARE.

***"No stock is dealt with on such haphazard lines as are applied to the rearing of human beings."**

(1) *On the Inspection of Midwives and other activities of the Local Supervising Authority.*

There were at the end of 1925, 99 midwives on the Roll, 95 trained and 4 untrained.

Two midwives, one at Cleator Moor and one at Arlecdon and Frizington, are in the employment of and paid by the County Council.

The midwives in the County attended 66% of the births:—64% in Urban and 68% in the Rural districts.

All midwives can now be supplied with confinement outfits comprising:—

6 small perineal pads,
6 large perineal pads,
1 sterilised binder,
1 accouchement sheet 12 x 12,
2 accouchement sheets,
1 packet antiseptic wool flakes,
6 safety pins,
2 waterproof sheets,

for the small sum of 6s. 4d.

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* Sir Truby King, Director of Child Welfare, New Zealand.

These are sold to patients at cost price, and can be paid for, to the midwife, by weekly or other instalments as may be agreed upon.

Miss March, the Inspector of Midwives, paid 346 visits of inspection, and reports as follows:—

"All midwives are visited as a matter of routine every three months, when their bags, books, and equipment are thoroughly examined and detailed reports are written out for the Local Supervising Authority. In addition any cases of high temperature or complications of any kind, exposure to infection, and particularly cases of Ophthalmic Neonatorum are visited as soon as the notification is received. Special enquiry is made and instructions given as to the necessary precautions to be taken."

The midwives as a rule comply well with the Rules of the Central Midwives Board.

The number of notices received in accordance with Rule 23 are as follows:—

	1921.	1922.	1923.	1924.	1925.
Medical help	73	115	127	143	194
Still-birth	14	22	15	15	27
Liability to be a source of infection	7	1	9	16	9
Artificial feeding ...	12	23	16	21	30

Payments made to doctors under Section 14, Midwives Act, 1918, amounted to £214 3s. 0d.

Section 14 (1) of the Act is as follows:—

"In case of any emergency as defined in the rules framed under Section 3, 1 (e) of the principal Act a midwife shall call in to her assistance a registered medical practitioner, and the Local Supervising Authority shall pay to such medical practitioner a sufficient fee, with due allowance for mileage, according to a scale to be fixed by the Local Government Board."

The scale at present in force (Circular 358, M.O.H., 1922) is as follows:—

SCALE OF FEES FOR DOCTORS CALLED IN BY MIDWIVES.

1. Fee for all attendances of a doctor at parturition (i.e., from the commencement of labour until the child is born), whether operative assistance or not

is involved, including all subsequent visits during the first 10 days inclusive of the day of birth ... ... £2 2s. 0d.

2. Fee for attendance of a second doctor to give an anæsthetic, whether on account of abortion or miscarriage, at parturition or subsequently £1 1s. 0d.

3. Fee for suturing the perineum, for the removal of adherent or retained placenta, for exploration of the uterus, for the treatment of post-partum hæmorrhage or for any operative emergency arising directly from parturition, including all subsequent necessary visits during the first 10 days, inclusive of the day of birth ... ... £1 1s. 0d.

   This fee not to be payable when the fee under (1) is payable.

4. Fee for attendance at, or in connection with, an abortion or miscarriage, including all subsequent visits during the 10 days from and including the first visit ... ... £1 1s. 0d.

5. Fee for visits to mother and/or child not included under (1) to (4)—

   Day (9 a.m. to 8 p.m.) ... ... 5s.
   Night (8 p.m. to 9 a.m.) ... ... 10s.

6. The usual mileage fee of the district to be paid for all attendances under (1) to (5) of this scale.

7. Fee for attendance on mother and/or child at the doctor's residence or surgery ... ... 2s. 6d.

8. No fee shall be payable by the local supervising authority:—

   (1) where the doctor has agreed to attend the patient under arrangement made by or on behalf of the patient or by any Club, Medical Institute or other Association of which the patient or her husband is a member, or when the doctor is under obligation to give the treatment to the patient under the National Health Insurance Acts, 1911 to 1922.

   (2) where the doctor receives or agrees to receive a fee from the patient or her representative.

   (3) In respect of any services performed by the doctor on any date later than the 10th day from the date of his first attendance unless he has reported

to the local supervising authority that he considers, for reasons stated by him, that his further attendance is necessary, or in respect of any services performed by the doctor after the expiry of four weeks from the day of birth.

Section 14 (2) requires the practitioner in claiming his fee to state the nature of the emergency.

Section 14 (3) requires the midwife to notify forthwith to the Authority the name of the practitioner and the nature of the emergency.

Section 14 (4) enables the Authority to recover the fee from the patient, husband, or other person liable except in proved poverty.

Advising Medical Help.—Notifications of having advised medical help were received in 194 cases, which may be classified as follows:—

Abortion and threatened abortion ...	3
Hæmorrhage	6
Ruptured Perineum	35
Uterine Inertia	8
Miscarriage	3
Retained Placenta	9
Malpresentations	15
Delay in labour	55
Eclampsia	1
Rise in temperature	6
Dangerous feebleness	7
Inflammation of eyes	13
Prematurity	6
Stillbirth	6
Other conditions	21

During 1925 a series of lectures to nurses and midwives were given at two centres—Carlisle and Whitehaven. The lectures were given by highly qualified experts in the subjects dealt with, and were exceedingly well attended. These lectures will be continued, and are the first result of the approval by the County Council of the suggestion to provide for and encourage post-graduate work by the medical and nursing staff in their special subjects.

All midwives now have received instruction in urine testing and all have the necessary outfits. They are advised to test from time to time, and when necessary to send their cases for medical attention.

(2) *On the general arrangements made for attending to the health of expectant mothers and of children under five years of age.*

No scheme of Maternity and Child Welfare can fulfil the functions for which it is instituted, viz., the prevention of disease and the preservation of health, unless it makes provision for:—

1. Medical attention for women before and after the birth of a child (ante and post-natal attention).
2. Nursing and medical attention for children from the time of birth until they come under the supervision of the School Medical Service.

These services can be made available either by (a) home visiting or (b) the establishment of Maternity and Child Welfare Centres, but it is generally found that to make a scheme successful there must be both.

The Health Department of the County Council was inaugurated in 1908 by the appointment of a County Medical Officer of Health, and one of the first activities of the department was an enquiry into the infant mortality in the County, which in that year was 126 per 1,000 births.

In 1907 the Notification of Births Act was passed, and as a first step towards doing something to lower the infant mortality it was suggested that this Act should be adopted for the County as a whole. The sanction to the adoption of the Act was not, however, obtained till 1914, and during the interval the Act was adopted by the two Boroughs of Whitehaven and Workington and by the Urban district of Penrith. The County Council, therefore, became the Authority for administering the Act in the County with the exception of these three districts, but in 1925 the Penrith Urban Council transferred with the sanction of the Ministry their powers and duties to the County Council.

After the receipt of Circulars from the Local Government Board referring to Maternity and Child Welfare, and from the Board of Education with reference to Schools for Mothers, a preliminary report on Maternity and Child Welfare was submitted to the Health Committee in October, 1914, in which it was suggested that health visiting should be undertaken by the whole-time school nurses, helped by the nurses in the various districts, and that clinics for mothers and children should be held in the buildings utilised as school clinics.

This scheme was commenced, but before it could be put into complete operation the war intervened and put a stop to all progress. Home visiting has, however, been continued from that time.

A complete scheme founded on the model scheme suggested by the Local Government Board in 1914 and amplified by a further Circular in 1918, was submitted to the Health Committee in September, 1919, and has been in operation since that date, so far as the available medical staff would permit.

Clinics have been established in Arlecdon and Frizington, Cleator Moor, Maryport, Penrith, Millom, Egremont, and Wigton. In Wigton, although attended by a Medical Officer of the County Council, the Clinic is managed by a Voluntary Committee.

Owing to the unprecedented depression in trade neither the Maternity nor the Child Welfare work has developed along the lines on which it was hoped and expected.

An entirely wrong impression seems to prevail in the minds of the public with regard to the true functions of a Maternity and Child Welfare Clinic. The impression seems to be firmly fixed that the primary function of a clinic is that it is essentially a treatment centre, at which all ailing mothers and children can, if required, have free treatment and where expectant and nursing mothers as well as many children may obtain a supply of free milk, whatever their circumstances and whether they are ailing or not.

The first essential in this, as in every other branch of preventive medicine, is to educate public opinion, a task which requires infinite patience and care. Unless the public realise the true functions of a Maternity and Child Welfare Scheme, and are prepared to take full advantage of what is offered to them, it can not be a success. It must from the outset be realised that the object of the scheme, whether the work is done in the people's homes or at a clinic, is the preservation of health, the prevention and not the treatment of disease.

I am satisfied that the work done by both the Health Visitors and the District Nurses, under Miss March's supervision, has been excellent and has been productive of much good, and I hope in the near future, when trade is better and money more plentiful, to see a considerable extension of the clinics.

During 1925 the following visits were paid to the homes:—

	By Health Visitors.		By District Nurses.
To births notified 1st visits ...	1021	...	1550
To births not notified ...	174	...	--
Re-visits	5556	...	16065
Ante-natal visits	502	...	4215
Visits to children 1-5 years ...	536	...	4290
	7789	...	26120

Pregnancy and child-birth are normal physiological functions, but when it is remembered that great changes occur in the bodily functions of the pregnant woman and what a great strain is thrown on the mother it is not difficult to understand that it takes little to upset the balance between health and disease.

Modern teaching of midwifery practice all tends to show that given skilled and adequate medical supervision throughout pregnancy the dangers and difficulties of child-birth can be enormously diminished.

A large proportion of expectant mothers can obtain medical advice from their own private practitioner; for those who cannot afford this it is necessary to establish clinics, where the necessary advice can be given free.

The ideals to be aimed at in such an Ante-natal Clinic are:—

1. To ensure that the expectant mother is healthy and to maintain her health all through her pregnancy.
2. To give her instruction regarding her own health and to enlighten her on its important bearing on the health of the coming infant.
3. To discover and remedy any abnormalities that may arise.

4. To secure a normal labour, followed by a satisfactory lying-in period, with a healthy breast-fed baby and an undamaged mother.

But it may be asked: Is there any necessity for expectant mothers to attend an Ante-Natal Clinic?

I find in Dame Janet Campbell's Report on Maternal Mortality, to the Ministry of Health, that the County of Cumberland in the years 1919-22 had the third highest mortality from child-birth of all the Counties in England, nor does this mortality show any sign of decreasing, as is evidenced by the following table:—

Maternal Mortality per 1,000 Births.

	In England.	In Cumberland.
1921	3.71	4.5
1922	3.58	5.1
1923	3.60	5.6
1924	3.70	5.7
1925	3.86	5.2

Speaking generally, maternal mortality is higher in Urban than in Rural districts:—

	Cumberland Urban.		Rural.	
	No. of deaths.	Ratio per 1,000 births.	No. of deaths.	Ratio per 1,000 births.
1921	16	5.0	8	3.7
1922	14	4.9	11	5.4
1923	18	6.5	8	4.2
1924	16	6.1	10	5.3
1925	12	4.9	10	5.7
	76	5.1	47	4.8

As is shown in the following table, the maternal mortality varies considerably in the different sanitary districts in the County:—

Table showing the ratio of maternal deaths per 1,000 *births in the different sanitary districts in the* 5 *years* 1921-1925.

Urban.		*Rural.*	
Millom	12.8	Alston	12.2
Cleator Moor	11.1	Brampton	6.7
Harrington	7.2	Penrith	6.4
Cockermouth	6.4	Cockermouth	5.4
Maryport	6.4	Wigton	4.8
Penrith	5.8	Bootle	4.0
Wigton	5.2	Whitehaven	3.6
Workington	4.6	Longtown	3.0
Whitehaven	4.3	Carlisle	1.9
Arlecdon and Frizington	3.0		
Keswick	2.9		
Aspatria	2.8		
Egremont	2.5		
Holme Cultram	0.0		

When there is this high mortality it is quite safe to assume that at least three times this number of women suffer in some way after child-birth, either for a lengthy period or more often throughout the remainder of their lives, from conditions the vast majority of which could have been prevented.

The great majority of women are much too philosophic and attribute any ailment during pregnancy to " their condition," and in most cases are content to leave it at that.

It is the duty of every woman, a duty she owes to herself, to her husband, and to her coming child, as soon as she knows she is pregnant to engage an attendant for her confinement and to seek competent and skilled advice to ensure that all is well. In a large proportion of cases no medical attention is necessary, but in others timely medical advice and attention is of the utmost importance in order that tragedy may be avoided.

If no medical attention is necessary so much the better. Surely it is worth while to be assured that she can look forward to the succeeding months with every confidence that they will terminate with a safe delivery, a healthy baby and an undamaged mother. Even should medical attention not be necessary, advice regarding her own health, in order to safeguard the health of her baby, is surely worth while.

The majority of women require advice on their daily habits, exercise, dress, baths, and general hygienic care, and particularly advice which will enable her to feed her child.

The main object of ante-natal care during the early months is to avoid miscarriage, premature birth, and abortion, all of which are a fruitful source of loss of child life, and the cause of loss of health, suffering, and frequently death of the mother.

Most of the conditions which cause the excessive maternal mortality have their beginnings early in pregnancy, and their onset may be indicated to those trained to observe them by such common symptoms as headache, swelling of the feet, or slight swelling or may be only stiffness of the eyelids on waking in the morning. These symptoms, though in themselves slight, are often indicative of serious conditions to follow, but in most cases any grave danger to health or life can generally, provided early and efficient treatment be obtained, be warded off.

Although, as has previously been pointed out, infant mortality as a whole has decreased in a very satisfactory way, the death-rate of infants during the first three months of life has not shown a similar decrease. As a matter of fact the deaths of infants under three months old, taken over a series of years, represent 60% of the total infant deaths, and over 40% of this 60% is due to Premature Birth and Congenital Debility.

As both these conditions are due, in most cases, to certain conditions present in the mother, efficient treatment would prevent the greater part of this loss of child life.

This, in my opinion, is the main direction in which we can look for a further and substantial reduction in infant mortality.

I consider that a large field in preventive medicine lies in the age period between 1 and 5 years, and if we had efficient Child Welfare Centres where all children in this age period could be periodically medically examined and efficiently treated, we would be going a long way towards preventing so many children entering our elementary schools handicapped educationally and physically by some defect.

At the present time we have 7 Maternity and Child Welfare Clinics in Urban areas, and the population of the Urban areas for which the County Council is the Authority under the Maternity and Child Welfare Act is 74,510. In the Rural areas the County Council is the Authority under the same Act for a population of 97,530, for which no Maternity and Child Welfare Clinics are provided, the rural mothers and children are therefore dependent for advice and help on home visits from the Health Visitors and Nurses; no medical advice is provided for those in the Rural areas who cannot afford to pay private practitioners.

In my last Annual Report to the Education Committee I suggested that in order to carry out the treatment required by school children in rural areas, a motor caravan should be fitted up as a Clinic to visit periodically the villages in rural areas.

I suggest for the consideration of the Health Committee that such a caravan fitted up as a Maternity and Child Welfare Clinic, and shared with the Education Committee, would meet the needs of both Committees, and would be of great service to the people in rural areas.

This is not the time to ask for or to suggest any increased expenditure, but so important do I consider this work, that I venture to throw out the suggestion in order that, when the time arrives when it is possible to spend more money on Health Services, the matter may have the serious consideration which its importance demands. But I am bound also to point out that there cannot be any extension of the medical services without a corresponding increase in the medical staff, and for the purposes of Maternity and Child Welfare work I consider a female medical officer would be preferable, and if one experienced both in this and Orthopædic work could be obtained such an appointment would very materially enhance the value of Maternity and Child Welfare work and that under our Cripple Scheme.

This is the one direction in which our medical services, in my opinion, fall far short of the ideal, and I venture to hope that when the time is more opportune this matter, as well as an increase in the dental staff, may be carefully and favourably considered.

It is neither necessary nor wise to make extravagant and exaggerated claims for what a well organised and efficiently carried out scheme of Maternity and Child Welfare could do. The facts as stated speak for themselves, and when it is realised that such a scheme provides that every mother and every expectant mother can have herself and her child medically examined periodically, we can, I think, leave it to the commonsense of the people themselves to arrive at the conclusion that a child so dealt with must have an immeasurably better chance of, on the one hand, escaping an early death, and on the other of growing up into a healthy and strong man or woman than the less fortunate child who only comes under medical care when disease—which in many cases is beyond the stage of cure—has fastened its grip upon it.

For nearly three years now Dr. Towers has been responsible for carrying out the Maternity and Child Welfare scheme in the two industrial centres of Cleator Moor and Millom. Under the very trying industrial circumstances extending over five or six years in these two areas Dr. Towers has had an exceedingly difficult task, but his enthusiasm in the cause of Public Health, his ability, and his painstaking care have enabled him to surmount all difficulties, and the inhabitants in these two areas owe to him a deep debt of gratitude.

He has, at my request, furnished me with the following notes and impressions of the work of the Maternity and Child Welfare Centres in these two areas:—

" When I took charge of this area in January, 1923, Clinics for Expectant and Nursing Mothers and Infants had been in operation for about a year. At this time I found the actual clinical work was very little, most of the time being occupied with the issue of vouchers for fresh milk. Gradually, however, the clinics became better and more widely known, and the number of infants brought for advice and treatment increased steadily. Eventually this increase of work was such that it was no longer possible to carry it out on the same morning as the School Clinic, which had hitherto been the case. At Cleator Moor, therefore, an entire morning per fortnight was assigned to Baby Clinics. At Millom, unfortunately, it has not been found possible to follow this example, and these Clinics are still run concurrently with the School Clinic. This arrangement is exceedingly unsatisfactory. Millom has a School Clinic attendance of over 4,000 per annum, and this huge number of children cannot be dealt with adequately in the time available, viz., one morning; and yet it not only has to be dealt with, but done in conjunction with the M. and C. W. Clinic. The only apparent solution of the difficulty is to devote a whole *day* to the School Clinic, and divide another day between the M. and C. W. Clinic (morning) and the Tuberculosis Dispensary (afternoon) as is done in the case of Cleator Moor now. This is an almost impossible remedy to put into operation at present, as it would unduly drain the time available for School Medical Inspections. There is another alternative, but I think the whole matter would be better discussed separately.

Up to the present, the majority of infants brought for examination and treatment have been in the 0-1 age group, attendances of children between 1 and 5 years being comparatively few. I think that the reason for this is not far to seek. Broadly speaking, the majority of defects for which advice is sought during the first 12 months of life are connected with feeding troubles and early dentition. Over the age of 1 these troubles rapidly diminish, and so do the attendances. Yet very many defects remain untreated until such time as the child's name is entered on the register of some school. I understand that arrangements, within financial limits, are now available for certain defects, e.g., otorrhœa, tonsils and adenoids, and urgent eye defects. Such defects if untreated get steadily worse, become more difficult to correct, and interfere to some extent with school attendance. I would especially like to draw attention to the great importance of attending to a squinting eye at the earliest possible moment. In 9 cases out of 10 an eye that squints is a useless eye as far as vision is concerned, until it is corrected by suitable glasses, etc. In this connection, Dr. Ross, in contributing some observations to the Report of the School Medical Officer for 1925, on the subject of Visual Defects, says:

> ' A squinting eye may go blind in a month from the onset of the squint, and it will be useless for ever for reading with, and useless for earning a livelihood.'

> ‘No child is too young to have attention.’
>
> ‘Every third (untreated) squinting eye loses useful vision for ever.’

Again, it does not seem to be sufficiently appreciated that at least a very great deal of consumption has its origin in early childhood. Further, no case of phthisis starts as such, but has its origin in small beginnings. Probably no disease is so amenable to treatment under suitable conditions if detected early enough, and in infancy and early childhood, one can go a step further and get the disease before it is definitely diagnosable, i.e., at the stage when one can only strongly suspect that trouble is coming, in other words, it is one of the best possible examples of ‘prevention being better than cure,’ the whole aim of all public health.

It is probably not an exaggeration to say that upwards of 50% of defects recorded for treatment in the entrant group at School Medical Inspection would disappear if the same treatment were available for infants as is given to school children, and this would reflect on all other school age groups automatically.

One cannot help thinking that it would be a very great advantage if infant welfare and school medical work could be more closely co-ordinated than is the case at present. It would not be difficult to devise a card, on which not only would the whole medical history during infancy be recorded, including any treatment carried out, etc., but also any important pre-natal facts noted. This card would remain at the Infant Welfare Centre in all areas where these exist, until such time as the child reached school age, when the card would become the school medical card, and be transferred to the school. Thus the whole medical history of a child up to 14 would be available on one card.

Ante-Natal.

The foregoing remarks all apply to infants. There is another aspect to be considered—the mother's health during the pre-natal period. Nothing practical in this line is attempted at present, and yet a very great deal can be done during this time. There can be no doubt that a great deal of maternal ill-health and infant mortality is due to preventable causes, which can be discovered and guarded against during the pre-natal period.

Thus, the systematic examination of the urine in every case of pregnancy would bring to light the presence of albuminuria with its attendant risks of eclampsia. Malpositions, can be corrected, thus saving complicated and dangerous deliveries.

Measurement of the pelvis reveals maternal deformities, unfortunately incapable of correction, but at least, when birth is impossible ' per vias naturales,' to be forewarned is to forearmed. Nothing seems so tragic as the ruining of a probably successful Cæsarian section by sepsis owing to preceding abortive efforts at natural delivery.

Then there is the case of the expectant mother who is the victim of tuberculous disease. This is a subject that merits, probably, more consideration than anything else, and bristles with difficulties. As is common knowledge, an otherwise latent tuberculous infection is apt to light up in a most malignant way, either during pregnancy or the period immediately following birth. One has been brought in contact with more than one case in the Tuberculosis Dispensaries in this area, in which tuberculous lung trouble had been treated successfully apparently, or at least the disease was latent with a good prospect of ultimate cure, till pregnancy occurred and ruined everything a fatal termination resulting very rapidly.

What could or should be done for these unfortunate cases is one of the most difficult problems with which one can be confronted, and certainly not one to be dealt with in a short resumé such as this.

Propaganda.

There exists a very wide scope in this area for dissemination of general knowledge and commonsense in relation to health and infant welfare. As it is, bits of information and advice are given to mothers as occasion arises at the Clinics, but it is necessarily spasmodic and not systematised. What was in one's mind was the giving of quite short talks occasionally to a small assembly of mothers. Probably the best person to give these would be the Nurse in charge at the Clinic. Everyday experience obtained from the working of the clinics would readily suggest subjects. Mothers could be encouraged to come for advice and information. The idea is fairly common that to become a mother necessarily involves more or less chronic and permanent ill-health, or at least that the risk of this is very great. Unfortunately, this is in fact very often the case, but as already suggested, the causes are frequently avoidable.

Infant feeding is another subject on which there is still a most surprising amount of ignorance displayed in some cases. One would hardly have thought it possible to have had to inform mothers that *kippers* (even though the 'bones had been picked out') and sips of beer, are not suitable articles of diet for infants of under 1 year. I have had this experience during the past few months. There is more than a suspicion in my mind that in these cases the mother *did* know better, but that it was the male parent who was at fault in urging that the unfortunate infant *must* be hungry with nothing but milk!

Another great source of trouble constantly met with concerns the use of the 'dummy teat' or 'comforter.' It is very difficult indeed to persuade some mothers to abandon the use of this pernicious article, and it is easy to understand this, for it certainly does give a little peace and quiet. Nevertheless, no opportunity should be lost in condemning its use unmercifully. I have noticed a curious custom exists amongst mothers of moistening the comforter first by putting it in their own mouths before giving it to the baby to suck. I have myself seen this carried out by a mother suffering from a most advanced degree of pyorrhœa, gums literally oozing with pus, etc., and yet the comforter goes direct from such a mouth as this into that of an infant. Everyone must have witnessed comforters picked up off the floor, as often as not, a railway carriage floor, and given straight to a baby. Apart altogether from this gross physical danger, it is extraordinary how rapidly it puts the baby in the position *of master*, and the mother in that of a slave, a relationship that is apt to persist. It is to be feared that no measure, short of legislation to make the sale of comforters illegal, is likely to meet with much success.

Infant Food.

About 15 months ago, the issue of vouchers for fresh milk was abandoned in favour of the issue of Ambrosia Dried Milk. I would like to take this opportunity of recording the opinion that the change has been of enormous benefit. It is obvious that Dried Milk is infinitely cleaner and purer, its composition is constant, it is more economical, eliminating the risk of turning sour in hot weather, and is easily and rapidly prepared for use. The opportunities for contamination occurring are reduced by about 90%. One has only to think of an excellent article such as Ambrosia, manufactured from selected milk obtained from tubercle-free cows, the milk being strained and purified before conversion into the dried state, untouched by hand, and packed into waterproof paper bags in sealed cardboard cases, which remain sealed, till in the house of the consumer, etc., and compare it with the conditions of sale of fresh milk to appreciate the difference.

It is not to be wondered at that gastero-intestinal troubles show a downward tendency. It used to be exceedingly common to have complaints of vomiting of curds, pains, restlessness, and flatulence, etc., but by comparison, such complaints are now rare. That I am not alone in my opinion on the advantages of Dried Milk is evident from the number of infants brought to the Clinics by their mothers, who say they have been advised by the various District Nurses to put the infant on Ambrosia.

Those unaware of existing conditions may argue:—'Why bother about all this when the best and the natural way to feed an infant is on the breast?' No one could for a moment dispute the truth of the statement contained in this criticism, but the criticism itself is very easily answered, and the answer is this: that only the very smallest percentage of mothers are physically fit to nurse their babies.,

It is necessary to advise all mothers that when feeding infants on Dried Milk, it is essential to give fresh fruit juice regularly. In cases of rickets, it has been found of very great benefit to add a few drops of cod liver oil emulsion to each feed combined with a little lime water occasionally.

I am aware that many of the suggestions in these observations are impracticable and impossible to apply, at present at any rate, but the opinions expressed and suggestions made are the result of impressions one has derived from experience gained in this area during the past 3 or 4 years, and it is these impressions, I understand, you wished me to record."

Causes of Death in the Administrative Areas in the County of Cumberland, 1925.

Causes of Death.	Workington. M.B. 03		Arlecdon and Frizington. U.D. 04		Aspatria. U.D. 05		Cleator Moor. U.D. 06		Cockermouth. U.D. 07		Egremont. U.D. 14		Harrington. U.D. 15		Holme Cultram. U.D. 16		Keswick. U.D. 17		Maryport. U.D. 24		Millom. U.D. 25		Penrith. U.D. 26		Whitehaven. M.B. 27		Wigton. U.D. 34		Aggregate of U.D.'s.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
All Causes	206	190	45	32	24	17	60	51	41	41	47	42	28	26	40	34	41	42	73	69	45	65	66	79	152	145	30	19	898	852
1 Enteric Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2 Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3 Measles	10	7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	—	3	2	—	—	16	9
4 Scarlet Fever	1	—	—	—	1	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1	—	3	3
5 Whooping Cough	1	—	2	1	—	—	—	4	—	—	2	1	—	—	—	1	—	—	—	1	—	—	—	—	—	3	2	—	7	11
6 Diphtheria	1	—	—	—	—	—	—	1	1	—	—	—	1	—	—	—	—	—	2	3	—	—	—	—	—	—	—	—	5	4
7 Influenza	15	7	1	1	2	—	2	2	2	1	1	1	—	—	1	3	1	3	1	2	1	—	1	3	7	4	3	2	38	29
8 Encephalitis Lethargica	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
9 Meningococcal meningitis	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—
10 Tuberculosis of Respiratory System	9	8	2	1	1	1	6	3	3	4	3	5	4	1	—	1	1	4	2	4	3	3	2	3	5	7	1	2	42	47
11 Other Tuberculous Diseases	2	3	—	1	—	—	4	2	1	—	3	—	1	—	—	—	2	—	1	—	1	1	2	2	5	4	1	—	23	13
12 Cancer, malignant Disease	17	18	6	4	3	2	6	6	6	1	4	5	4	5	4	3	5	4	10	7	6	9	8	8	13	9	3	3	95	84
13 Rheumatic Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1	1	—	—	2	1
14 Diabetes	1	—	—	1	—	—	—	—	1	1	—	—	—	1	—	—	1	—	—	—	—	—	—	1	2	—	—	—	5	4
15 Cerebral Hæmorrhage, etc.	14	23	—	3	—	2	3	2	4	2	7	3	2	1	2	7	4	—	3	4	4	4	5	10	12	8	—	2	60	71
16 Heart Disease	12	25	4	2	6	5	2	10	6	11	3	4	1	7	3	1	5	7	9	11	7	10	10	17	11	18	5	1	84	129
17 Arterio-sclerosis	5	—	1	—	1	—	1	—	2	—	3	1	1	—	1	—	—	—	1	3	1	1	3	3	4	1	1	—	25	9
18 Bronchitis	14	14	—	1	1	1	3	3	1	5	3	4	3	—	3	5	2	2	7	6	3	5	4	1	22	25	2	1	68	73
19 Pneumonia (all forms)	27	21	6	2	3	1	4	4	5	3	6	1	2	1	1	3	1	2	5	4	2	3	4	2	18	10	2	1	86	58
20 Other Respiratory Diseases	2	1	2	1	—	—	3	1	—	1	2	1	—	—	2	—	2	2	2	1	1	1	1	—	—	2	—	—	17	11
21 Ulcer of Stomach or Duodenum	1	1	1	—	2	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	—	—	2	1	3	2	—	—	11	4
22 Diarrhœa, etc. (under 2 years)	6	6	3	—	—	—	—	—	1	—	—	1	—	1	—	—	—	—	1	1	2	—	—	—	4	2	2	1	19	12
23 Appendicitis and Typhlitis	1	1	—	—	—	—	2	—	—	—	—	…	—	—	—	—	—	—	1	—	1	—	1	—	1	—	—	—	7	1
24 Cirrhosis of Liver	1	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	2	—	—	—	5	—
25 Acute and Chronic Nephritis	3	2	1	1	—	—	4	—	2	—	1	1	—	—	3	2	2	3	1	2	—	4	2	3	4	3	1	1	24	22
26 Puerperal Sepsis	—	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
27 Other accidents and Diseases of Pregnancy & Parturition	—	4	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	3	—	—	—	3	—	—	—	11
28 Congenital Debility & Malformation, Premature Birth	12	4	4	2	1	—	2	3	1	1	1	1	2	—	1	1	3	1	8	1	3	4	—	1	5	6	1	1	44	26
29 Suicide	1	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	1	—	—	1	1	—	—	—	—	—	—	—	5	1
30 Other Deaths from Violence	7	2	4	1	—	—	2	—	—	2	3	—	2	—	5	1	3	1	3	2	—	1	1	1	9	5	1	1	40	17
31 Other Defined Diseases	42	42	7	10	3	4	14	9	3	7	5	12	4	7	12	5	8	11	16	15	8	15	16	22	20	28	4	3	162	190
32 Causes Ill-defined or Unknown	—	1	—	—	—	—	1	1	—	1	—	1	—	—	1	—	—	2	—	1	1	1	—	1	1	1	—	—	4	10
Special Causes (included above)																														
Poliomyelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Polioencephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Deaths of Infants under 1 year: Total	41	23	8	3	3	—	7	13	2	1	5	4	5	1	2	4	3	2	18	9	7	5	4	3	25	26	4	4	134	98
Deaths of Infants under 1 year: Illegitimate	—	3	1	1	—	—	—	—	1	—	—	1	—	—	1	1	2	—	4	—	—	—	—	2	1	2	1	1	11	11
Total Births	278	250	51	55	35	22	81	67	47	42	62	70	52	50	33	42	25	31	120	126	65	64	73	68	278	272	40	33	1240	1192
Legitimate	269	240	47	54	32	21	79	64	45	41	59	70	51	47	29	40	20	30	116	123	63	63	72	60	268	265	38	30	1188	1148
Illegitimate	9	10	4	1	3	1	2	3	2	1	3	—	1	3	4	2	5	1	4	3	2	1	1	8	10	7	2	3	52	44
Population	27300		5163		3670		8320		4850		7059		4567		4803		4184		11230		8665		8262		20690		3737		122500	
Standardizing Factor for Death-rate	.977																		.939						.967					

Causes of Death.	Alston with Garrigill. R.D. 08		Bootle. R.D. 09		Brampton. R.D. 18		Carlisle. R.D. 19		Cockermouth. R.D. 28		Longtown. R.D. 29		Penrith. R.D. 38		Whitehaven. R.D. 39		Wigton. R.D. 48		Aggregate of R.D.'s.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F	M.	F.	M.	F.	M.	F.
All Causes	18	16	22	32	60	51	77	75	151	155	48	48	71	62	80	88	78	79	605	606
1 Enteric Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2 Small-pox	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3 Measles	—	—	—	—	1	—	—	—	2	1	—	—	—	—	—	—	1	—	4	1
4 Scarlet Fever	—	—	—	—	1	—	—	—	—	1	1	—	—	—	—	1	—	1	2	3
5 Whooping Cough	—	—	—	—	1	—	1	1	5	4	1	—	—	—	2	2	—	1	10	8
6 Diphtheria	—	—	—	—	1	2	—	—	—	1	—	—	—	—	—	—	—	—	1	3
7 Influenza	1	—	1	2	5	5	9	7	6	6	1	1	4	3	3	3	3	5	33	32
8 Encephalitis Lethargica	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9 Meningococcal meningitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10 Tuberculosis of Respiratory System	1	—	—	2	4	1	5	3	4	13	3	4	3	1	7	2	3	2	30	28
11 Other Tuberculous Diseases	1	—	—	—	—	—	—	2	2	4	—	1	1	2	1	3	2	2	7	14
12 Cancer, malignant Disease	3	8	4	4	10	7	11	10	10	13	4	4	3	3	4	13	10	10	59	72
13 Rheumatic Fever	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14 Diabetes	—	—	—	3	—	—	—	1	1	1	—	1	2	—	—	1	2	—	5	7
15 Cerebral Hæmorrhage, etc.	—	1	—	5	5	8	1	8	6	11	1	3	1	8	8	5	7	3	29	52
16 Heart Disease	—	2	2	5	8	7	12	10	15	18	5	5	16	10	7	8	12	16	77	81
17 Arterio-sclerosis	1	—	1	2	4	1	4	3	5	1	7	9	5	4	4	2	5	5	36	27
18 Bronchitis	1	—	—	2	4	2	2	3	11	13	—	2	—	3	5	9	1	6	24	40
19 Pneumonia (all forms)	2	—	2	2	2	5	3	2	16	11	—	1	3	2	8	7	5	2	41	32
20 Other Respiratory Diseases	—	—	—	—	2	1	—	—	5	3	1	—	—	—	3	1	—	1	11	6
21 Ulcer of Stomach or Duodenum	—	—	—	—	—	—	—	—	2	—	—	—	1	1	1	1	2	2	6	4
22 Diarrhœa, etc. (under 2 years)	—	—	—	—	—	—	—	1	3	5	—	—	1	—	2	1	1	—	7	7
23 Appendicitis and Typhlitis	—	—	—	1	—	—	1	1	1	—	1	—	1	—	—	—	—	—	4	2
24 Cirrhosis of Liver	—	1	—	—	—	—	1	—	1	—	—	—	—	—	—	—	—	—	2	1
25 Acute and Chronic Nephritis	2	—	—	1	1	—	—	—	3	2	—	2	—	2	2	1	1	1	9	9
26 Puerperal Sepsis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
27 Other accidents and Diseases of Pregnancy & Parturition	—	—	—	—	—	1	—	1	—	5	—	—	—	—	—	2	—	1	—	10
28 Congenital Debility & Malformation, Premature Birth	1	—	4	—	1	1	5	1	12	6	3	2	5	7	3	5	5	2	39	24
29 Suicide	1	—	—	—	1	—	—	—	—	—	2	—	1	—	1	—	—	1	6	1
30 Other Deaths from Violence	1	—	—	—	2	—	8	3	10	1	1	—	5	1	7	—	4	—	38	5
31 Other Defined Diseases	3	4	7	2	7	9	13	18	30	35	15	13	19	15	12	20	13	18	119	134
32 Causes Ill-defined or Unknown	—	—	1	1	—	1	1	—	1	—	2	—	—	—	—	1	1	—	6	3
Special Causes (included above)																				
Poliomyelitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Polioencephalitis	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Deaths of Infants under 1 year: Total	1	—	4	1	2	2	8	3	23	17	5	6	8	8	11	12	10	4	72	53
Deaths of Infants under 1 year: Illegitimate	—	—	1	1	—	—	—	—	3	2	—	1	—	—	—	—	1	1	5	5
Total Births	22	15	47	52	78	71	81	84	218	229	71	57	96	103	151	153	98	119	862	883
Legitimate	19	14	43	47	74	63	76	78	210	212	62	52	88	99	145	148	92	115	809	828
Illegitimate	3	1	4	5	4	8	5	6	8	17	9	5	8	4	6	5	6	4	53	55
Population	2703		5985		8103		11990		23130		6449		12100		15500		11570		97530	
Standardizing Factor for Death-rate							.793		.903				.819		.963		.761			

Causes of Death at Different Periods of Life in the Administrative County of Cumberland, 1925.

Causes of Death.	Sex.	Aggregate of Urban Districts.										Aggregate of Rural Districts.									
		All Ages.	0—	1—	2—	5—	15—	25—	45—	65—	75—	All Ages.	0—	1—	2—	5—	15—	25—	45—	65—	75—
All Causes	M	898	134	39	29	35	58	79	212	177	135	605	72	19	11	17	26	60	118	138	144
	F	852	98	28	30	28	32	80	174	178	204	606	53	11	14	13	25	67	119	128	176
1 Enteric Fever	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2 Smallpox	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3 Measles	M	16	4	6	5	1	—	—	—	—	—	4	—	2	—	1	1	—	—	—	—
	F	9	3	4	1	1	—	—	—	—	—	1	—	1	—	—	—	—	—	—	—
4 Scarlet Fever	M	3	1	1	—	1	—	—	—	—	—	2	—	—	—	1	—	—	1	—	—
	F	3	—	—	1	2	—	—	—	—	—	3	—	—	1	1	—	—	1	—	—
5 Whooping Cough	M	7	3	2	1	1	—	—	—	—	—	10	5	3	1	1	—	—	—	—	—
	F	11	9	2	—	—	—	—	—	—	—	8	4	2	2	—	—	—	—	—	—
6 Diphtheria	M	5	—	—	2	3	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—
	F	4	1	—	1	2	—	—	—	—	—	3	—	—	1	1	—	1	—	—	—
7 Influenza	M	38	1	1	1	—	3	8	13	7	4	33	—	1	—	—	—	5	8	9	10
	F	29	1	1	—	—	1	2	10	10	4	32	—	—	1	—	1	7	5	8	10
8 Encephalitis lethargica	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
9 Meningococcal meningitis	M	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
10 Tuberculosis of Respiratory System	M	42	—	—	—	1	12	17	12	—	—	30	—	1	—	1	5	13	10	—	—
	F	47	1	—	—	3	16	21	6	—	—	28	—	—	—	—	8	13	7	—	—
11 Other Tuberculous Diseases	M	23	—	3	2	5	7	3	3	—	—	7	—	—	1	2	2	—	1	1	—
	F	13	2	1	3	7	—	—	—	—	—	14	1	1	3	1	3	2	2	1	—
12 Cancer, Malignant Disease	M	95	—	—	—	2	—	3	46	32	12	59	—	—	—	1	—	6	21	16	15
	F	84	—	—	—	1	1	6	36	25	15	72	—	—	—	—	—	8	35	24	5
13 Rheumatic Fever	M	2	—	—	—	—	—	1	1	—	—	—	—	—	—	—	—	—	—	—	—
	F	1	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
14 Diabetes	M	5	—	—	—	—	—	—	2	3	—	5	—	—	—	1	1	—	2	—	1
	F	4	—	—	—	—	1	—	3	—	—	7	—	—	—	—	—	2	2	3	—
15 Cerebral Hæmorrhage, &c.	M	60	—	—	—	—	—	—	11	33	16	29	—	—	—	—	—	1	3	12	13
	F	71	—	—	—	—	1	3	15	27	25	52	—	—	—	—	—	2	11	20	19
16 Heart Disease	M	84	—	—	—	1	4	9	25	30	15	77	—	—	1	—	2	9	21	25	19
	F	129	—	—	—	2	3	7	30	45	42	81	—	—	—	—	2	4	14	33	28
17 Arterio-sclerosis	M	25	—	—	—	—	—	—	5	11	9	36	—	—	—	—	—	—	2	16	18
	F	9	—	—	—	—	—	—	1	5	3	27	—	—	—	—	—	—	2	7	18
18 Bronchitis	M	68	19	1	3	—	1	—	10	17	17	24	1	3	—	—	—	—	1	11	8
	F	73	10	3	3	—	—	—	16	17	24	40	5	2	—	—	1	—	5	8	19
19 Pneumonia (all forms)	M	86	14	8	2	7	7	12	22	9	5	41	10	2	1	1	3	6	13	3	2
	F	58	9	9	8	2	1	6	6	12	5	32	8	3	3	2	2	1	4	1	8
20 Other Respiratory Diseases	M	17	—	2	2	1	—	1	7	2	2	11	—	—	1	—	1	1	4	1	3
	F	11	1	—	—	—	—	1	—	1	8	6	—	—	—	—	—	2	1	—	3
21 Ulcer of Stomach or Duodenum	M	11	—	—	—	1	—	3	6	1	—	6	—	—	—	—	1	1	3	1	—
	F	4	—	—	—	—	—	—	4	—	—	4	—	—	—	—	—	2	2	—	—
22 Diarrhœa, &c.	M	20	18	1	—	—	—	—	1	—	—	11	6	1	—	1	—	—	—	—	3
	F	20	9	3	2	—	—	—	—	3	3	11	5	2	1	—	—	2	—	1	—
23 Appendicitis and Typhlitis	M	7	—	—	1	1	3	1	1	—	—	4	—	—	—	1	—	2	—	1	—
	F	1	—	—	—	—	—	—	1	—	—	2	—	—	—	1	—	—	1	—	—
24 Cirrhosis of Liver	M	5	—	—	—	—	—	1	3	1	—	2	—	—	—	—	—	—	2	—	—
	F	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	—
25 Acute and Chronic Nephritis	M	24	—	—	—	1	4	1	9	7	2	9	—	—	—	—	—	1	5	2	1
	F	22	—	—	—	—	—	2	11	5	4	9	—	—	—	1	—	2	5	1	—
26 Puerperal Sepsis	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	1	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
27 Other Accidents and Diseases of Pregnancy and Parturition	M	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	F	11	—	—	—	—	1	10	—	—	—	10	—	—	—	—	3	7	—	—	—
28 Congenital Debility & Malformation, Premature Birth	M	44	42	1	—	1	—	—	—	—	—	39	39	—	—	—	—	—	—	—	—
	F	26	26	—	—	—	—	—	—	—	—	24	22	—	—	2	—	—	—	—	—
29 Suicide	M	5	—	—	—	—	—	1	1	2	1	6	—	—	—	—	1	2	2	—	1
	F	1	—	—	—	—	—	1	—	—	—	1	—	—	—	—	—	—	—	1	—
30 Other Deaths from Violence	M	40	—	3	3	4	11	11	4	3	1	38	3	2	4	4	8	6	6	4	1
	F	17	3	—	2	1	2	2	2	1	4	5	—	—	—	—	2	—	1	—	2
31 Other Defined Diseases	M	161	32	9	7	4	5	6	28	19	51	115	8	4	2	1	1	7	11	32	49
	F	182	23	3	9	6	5	16	29	24	67	130	8	—	2	4	3	12	17	20	64
32 Causes Ill-defined or Unknown	M	4	—	1	—	—	—	1	2	—	—	6	—	—	—	—	—	—	2	4	—
	F	10	—	2	—	—	—	1	4	3	—	3	—	—	—	—	—	—	3	—	—

Provision of Hospital Beds.

At present one maternity bed is susidised by the County Council at the Whitehaven Infirmary at a cost of £100 per annum.

It is probable that in the future additional beds will be subsidised in the West of the County, and at the Carlisle Maternity Hospital for the East of the County.

Ophthalmia Neonatorum.

During 1925, 12 cases were notified, with the following results:—

Cases treated:					
At home.	In hospital.	Vision unimpaired.	Vision impaired.	Total blindness.	Deaths.
12	1	12	—	1	—

APPENDIX A.

Tabular Statement showing Water Supplies and Refuse Disposal in the Rural Districts by Parishes.

ALSTON RURAL DISTRICT.

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL. NUMBER OF W.C'S.	EXCREMENT DISPOSAL. NUMBER OF PRIVIES, ETC.	EXCREMENT DISPOSAL. ARRANGEMENTS FOR EMPTYING, ETC.	REFUSE DISPOSAL. HOW IS SCAVENGING DONE?	REFUSE DISPOSAL. IS IT SATISFACTORY?
Alston with Garrigill, 3344	To township of Alston from Springfield. A good supply, but risk of contamination from surface water	The old stone conduits are gradually being replaced by modern sewers	306	468	—	—	—
	To Nenthead from an old mine near Hardedge Farm.	Sewage discharged untreated into River Nent	…	…	…	…	…
	To Garrigill from Moss Banks. Filtered water.	…	…	…	…	…	…

BOOTLE RURAL DISTRICT.

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL. NUMBER OF W.C'S.	EXCREMENT DISPOSAL. NUMBER OF PRIVIES, ETC.	EXCREMENT DISPOSAL. ARRANGEMENTS FOR EMPTYING, ETC.	REFUSE DISPOSAL. HOW IS SCAVENGING DONE?	REFUSE DISPOSAL. IS IT SATISFACTORY?
Birker and Austhwaite, 53	No public supply	None	2	12	None by S. A.	Privately	?*
Bootle, 806	An ample supply from Bootle Fell. Extended to and beyond Bootle Station.	Main street of village sewered to a septic tank. Houses round station to a stream	89	123	None by S. A.	Privately	?
Corney, 186	No public supply	None	0	37	None by S. A.	Privately	?
Drigg & Carleton, 446	Ample. Joint scheme from Linbeck with Seascale	None	53	74	None by S. A.	Privately	?

Eskdale & Wasdale, 457	No public, but a private supply to parts. A scheme has been suggested on several occasions	None	37	61	None by S. A.	Privately	?
Irton & Santon, 510	Part supplied by Drigg and Seascale scheme. Now extended to Vicarage and School	None	32	81	None by S. A.	Privately	?
Millom Rural, 1239	Partly from Millom U.D.C. and part from a spring. Difficulty in supplying high parts	None	41	271	By contract	By contract	Fairly
Muncaster, 530	Ample supply by Muncaster estate	Main street of Ravenglass piped to rivers	61	98	None by S. A.	Privately	?
Seascale, 1144	Joint scheme with Drigg and Carleton. Difficulty in supplying high levels. Having attention	Practically whole Village sewered to sea	261	18	None by S. A.	By contract	Yes
Ulpha, 231	No public supply	None	21	49	None by S. A.	Privately	?
Waberthwaite, 279	No public supply	None	23	41	None by S. A.	Privately	?
Whicham, 395	Ample from springs on fells	Part of village of Silecroft piped to stream	27	69	None by S. A.	Privately	?
Whitbeck, 141	No public supply	None	3	27	None by S. A.	Privately	?

* Information not available.

BRAMPTON RURAL DISTRICT.

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Askerton, 245	Ample. Wells and springs	None	0	Generally 1 per house	By tenants	By tenants or owners	Yes
Brampton, 2590	Ample. Gelt and Glazier Springs	Town is sewered, disposal by irrigation	?	?	?	Contract	,,
Burtholme, 253	Ample. Wells and springs	None	0	Generally 1 per house	By tenants	By tenants	,,
Carlattan, 61	Wells	None	0	1 per house	,,	,,	,,
Castle Carrock, 346	Ample. Gelt. Houses on pipe line supplied from public taps	Village scheme nearing completion. Disposal by tnaks and filters.	?*	,,	,,	Contract	,,
Cumrew, 103	Wells and springs	None	0	,,	,,	By tenants	,,
Cumwhitton, 444	Springs and wells. Scarcity in parts	Village drained into stream	0	,,	,,	,,	,,
Farlam, 1034	Ample pipe supply to Hallbankgate, Farlam, Kirkhouse and Tindale	Hallbankgate sewered into stream	Few	,,	,,	By landlords	,,
Geltsdale, 15	Ample from springs	None	0	,,	,,	By tenants	,,
Hayton, 1210	Ample. Gelt. All houses on pipe line connected	Village of Talkin, Corby Hill (part), Little Corby and Fenton sewered, partly treated, and discharged into river	?	,,	,,	Contract	,,

Irthington, 671	... Gelt springs. All the wells of doubtful purity are now done away with	... Part of Irthington village sewered ...	?	"	... By tenants	... By tenants	... Yes
Kingwater, 258	... Wells and springs. Liable to contamination at Lees Hill	... West Hall Village sewered into stream ...	?	"	... "	... "	... "
Midgeholme, 221	... Ample from springs	... Village sewered into tank, and then to stream ...	0	"	... "	... "	... "
Nether Denton, 302	... Piped from springs to village of Low Row	... None ...	?	"	... "	... "	... "
Upper Denton, 200	... Springs on hillside	... Gilsland (part) sewered to stream ...	?	"	... "	... "	... "
Walton, 286	... Wells and springs. Scarcity in dry weather. Some shallow wells suspicious.	... Village sewered to land ...	1	"	... "	... "	... "
Waterhead 637	... Wells and springs	... Gilsland part sewered to stream ...	?	"	... "	... "	... No nuisance observed

CARLISLE RURAL DISTRICT.

Beaumont, 213	... City of Carlisle supply, Geltsdale. Excellent water	... Part of village of Beaumont irrigated on bank of river ...	1	40	... None by S. A.	... Occupiers	... No complaints
Burgh-by-Sands, 754	... City of Carlisle supply	... No modern system. Surface water drains used for slop water drainage discharge into ditches ...	7	142	... "	... "	... "

* Information not available.

CARLISLE RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Crosby-on-Eden, 260	Purchased by R.D.C. in bulk from City of Carlisle, Geltsdale supply	None. Surface water drains used for carrying off slop water to ditches, etc.	7	45	None by S. A.	Occupiers	No complaints
Cummersdale, 546	City of Carlisle supply. At times intermittent due to insufficient pressure	Part of village sewered to septic tank by owner	23	61	,,	Occupiers & owners	,,
Dalston, 1746	Wells, generally shallow and liable to pollution. Work for public supply from Roughton Gill in progress (1926)	No modern system. Part of village sewered into ditches and river	21	220	,,	,,	,,
Grinsdale, 164	City of Carlisle supply	None. Some private drains to ditches	1	24	,,	Occupiers	,,
Kingmoor, 948	Public supply by City and local springs by R.D.C. Excellent quality and ample	Villages of Kingstown & Moorville discharge into City sewers. Stainton to irrigation area. Cargo to tidal creek	87	80	,,	,,	,,
Kirkandrews-upon-Eden, 134	City of Carlisle supply	No public sewers. Slop water by private drains into ditches	6	20	,,	,,	,,

Orton, 399	Wells liable to contamination. A spring close to village. Works for public supply from Roughton Gill in progress. (1926)	Villages of Great and Little Orton, slop water to ditches	4	66	None by S. A.	Occupiers	No complaints
Rockcliffe, 559	Purchased in bulk from Carlisle City and distributed by R.D.C.	None. Slop water by ditches and drains to tidal river	4	95	”	”	”
St. Cuthbert's Without, 1856	Part by Carlisle City. Part from Roughton Gill. Work in progress. Some wells liable to contamination	The village of Blackwell and County Mental Hospital to Carlisle sewers	53 Not including Mental Hospital	111	”	”	”
Stanwix, 681	City of Carlisle's supply and isolated wells	None. Slop water drained into ditches	7	106	”	”	”
Warwick, 262	Wells and public supply by R.D.C. Springs in railway cutting	None. Slop water drains to ditches	9	51	”	”	”
Wetheral 3418	Wetheral from springs in railway (Cowran) cutting and a few wells. Scotby—City supply.	Villages of Wetheral and Great Corby roughing filters & irrigation	289	326	”	”	”
Wreay, 140	Wells. Works for public supply from Roughton Gill in progress (1926). Wells are generally shallow	None. Slop water to ditches	5	25	”	”	”

COCKERMOUTH RURAL DISTRICT.

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Above Derwent, 1404	Ample supply from Braithwaite reservoir to Braithwaite, Thornthwaite, part of Newlands. Portinscale from Keswick main and part from private tank on Whinlatter	Braithwaite—Settling tank with irrigation. Thornthwaite—Cesspools. Portinscale—Septic tanks and cesspools	119	62	Private	Privately	Yes
Bassenthwaite, 437	Chapel Beck and The Dash. Grave danger of contamination	Village sewered to tank and irrigation	?*	?	,,	,,	,,
Bewaldeth and Snittlegarth, 50	Springs, wells, and stream. Amount is doubtful, as is the quality	Bewaldeth drained to stream	2	21	,,	,,	,,
Blindbothel, 72	Pumps and wells of doubtful quality	None	8	18	—	,,	—
Blindcrake, Isel, and Redmain, 275	Wells and springs Unsatisfactory. Danger of contamination	Blindcrake drained to stream. Not satisfactory	?	52	Private	By owners or tenants	Yes
Borrowdale. 638	Private gravitation schemes. Good quality	Drained to stream, cesspools, and land. Unsatisfactory	4	21	,,	Privately	,,
Bothel and Threapland, 389	Bothel—Local springs. Threapland—Pumped from spring by a ram. Polluted.	Slop drainage only. Unsatisfactory	3	63	,,	By owners or tenants	,,

Brackenthwaite, 112	Pump and spring. Doubtful quality	None	2	9	—	Privately	—
Bridekirk, 117	Springs and pump. Insufficient quantity and doubtful quality	None	10	19	Private	,,	Yes
Brigham, 772	Crummock Lake	Brigham, septic tank and irrigation	113	49	Contract (part). Part private	Contract	Fairly
Broughton, 1360	Crummock	Great and Little Broughton satisfactory. Septic tanks and filters	137	89	Contract	,,	Yes
Broughton Moor, 932	Crummock	Village to tanks and filter. Fairly satisfactory *	66	87	Public scavenger	,,	,,
Buttermere, 130	Fell streams. Good quality & sufficient	None. Cesspools	?	?	Private	Privately	,,
Camerton, 240	Crummock	None	6	44	,,	,,	No
Castlerigg, St. John's and Wythburn, 783	Fell springs. Good quality	Private drains to cesspools and land. Except new houses near Keswick connected to Keswick sewer	?	50(?)	Private	,,	Yes
Crosscanonby, 927	Overwater	Crosby, Crosby Villa, & Birkby sewered. Septic tanks and filters and irrigation	116	30	?	,,	Fairly
Dean, 711	Good spring for Branthwaite and Dean. Defective at Beehive, Deanscales, Pardshaw, Pardshaw Hall, & Ullock	None	8	87	Private	,,	Yes

* Information not available.

COCKERMOUTH RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C.'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Dearham, 2075	Maryport mains	None. Only slop drainage	5	325	Owners or tenants	Privately	Very unsatisfactory
Dovenby. 189	Maryport mains	Tank and land irrigation. Not satisfactory	6	26	Private	,,	Yes
Eaglesfield, 232	Spring in centre of village, wells, and pump. Polluted	Drained. Discharge into overflow from village pond	?*	50	,,	,,	,,
Embleton. 388	Unsatisfactory from springs. Pumps and wells & brook. Liable to contamination	None	10	41	,,	,,	,,
Flimby. 2498	Maryport mains. Sufficient except at Flimby Brow	All sewered to sea	399	23	Public scavenger	Contract	,,
Gilcrux. 463	Water trough at side of road, springs and wells. Several polluted. Insufficient and of doubtful quality	Part sewered to open ditch	3	88	Private	Privately	,,
Great Clifton, 1188	Crummock Lake	Septic tanks and bacteria beds	193	8	—	Contract	,,
Greysouthen, 518	Crummock Lake	Drained. Discharge into runners and into river	14	81	Private	Privately	No
Isel Old Park, 79	Springs, wells, and pumps. Possibility of contamination	None	?	?	,,	,,	Yes

Little Clifton, 504	Crummock Lake	Chapel Brow, Bridgefoot, and Little Clifton sewered. Septic tanks and filters	82	7	Contract	Contract	Yes
Lorton, 326	Part from Crummock. Shallow wells and open runners. Danger of contamination	None	6	59	Private	Privately	,,
Loweswater, 289	Wells and pumps Springs. Quality doubtful	None	?	?	—	,,	,,
Mosser, 67	Wells and pumps. Quality doubtful	None	—	14	Private	,,	,,
Oughterside and Allerby, 622	Overwater	Oughterside, Prospect, and Allerby, septic tank and irrigation	88	18	Part public scavenger. Part private	Part contract. Part privately	,,
Papcastle. 539	Part Crummock, part Maryport	Goat and Papcastle direct into River Derwent. Belle Vue, tank & filter	86	3	Private	Part contract. Part private	No Yes
Plumbland, 576	Springs & gutters. Insufficient and of doubtful quality	Parts drained for slops to gutters	?	53	,,	Private	Yes
Ribton, 17	Crummock	None	—	2	,,	,,	,,
Seaton, 2010	Crummock. Shortage in parts at times	All sewered to sea	384	17	Public scavenger	Contract	,,
Setmurthy, 197	Part public supply—good. Part wells—doubtful purity	Dubwath sewered to septic tank and filters	21	27	Private	Private	,,
Skiddaw, 1	Spring	Drained to gutter	—	1	,,	—	—

* Information not available.

COCKERMOUTH RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Stainburn, 247	Crummock	Drained. Discharge into small brook without treatment, or into Workington sewer or into cesspools	24	31	Private	Private	Yes
Sunderland, 60	From a stream. Doubtful quality	None	1	14	,,	,,	,,
Tallentire, 202	Good supply from Tallentire Hill. Insufficient, due to defective main	Drained partly	2	49	,,	,,	,,
Underskiddaw, 237	Springs and mountain streams. Sufficient & good	A new main laid to Applethwaite from private supply in 1924	?*	?	,,	,,	,,
Whinfell, 86	Wells. Doubtful quality	None	?	4	,,	,,	?
Winscales, 102	Wells. Doubtful quality	None	5	26	,,	,,	?
Workington Rural, 193	Crummock (part). Wells and springs	Part to Workington sewer. Part to cesspools	26	3	,,	,,	Yes
Wythop, 131	Part good public supply. Wells. pump, & springs	None	11	13	,,	,,	,,

LONGTOWN RURAL DISTRICT.

Arthuret 2354	Longtown and District Scheme. Supplies village & 80 houses in country. 11 houses from private pumping schemes. Good quality & ample. Breckonhill from wells and pumps of doubtful quality	New scheme completed in 1921. Into settling tanks before discharge into river	183	274	Contract. Twice weekly. In Longtown	Contract By occupiers in country	Yes
Bellbank, 63	Wells and pumps	None	—	13	Occupier	Occupier	,,
Bewcastle, 611	Principally wells & pumps. 16 houses at Roadhead and Kinkry Hill inadequately supplied. Quality in some cases doubtful	None	2	146	,,	,,	,,
Hethersgill, 505	New 1924 scheme will amply supply Bolton Fell, Moss Edge, Hethersgill, and part of remainder of parish from Temper Kern Spring. Service connections not yet made	None	4	115	,,	,,	,,
Kirkandrews Middle, 226	All from Longtown & District Scheme	None	9	48	,,	,,	,,

* Information not available.

LONGTOWN RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF				
			W.C'S.	PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Kirkandrews Moat, 141	9 houses from Longtown and 13 by private schemes from springs. Adequate & good quality	None	3	30	Occupier	Occupier	Yes
Kirkandrews Nether, 439	All supplied from Longtown & District Scheme	At Gaitle from 32 wooden hutments is pumped to filters before discharge into stream. At Mossband from 24 hutments discharged into ditch and so into river	80	31	,,	,,	,,
Kirklinton Middle, 296	Ample and good from Temper Kern Spring. Connections not yet made	None	5	70	,,	,,	,,
Nichol Forest, 464	24 houses amply supplied by gravitation from springs and 5 by a pumped service. 11 houses at Scugg Road inadequately supplied and of doubtful quality	None	13	100	,,	,,	,,

Scaleby, 358	Ample & good from Temper Kern Springs. Connections not yet made	None	3	85	,,	,,	,,
Solport, 179	Wells and pumps. 13 houses have piped services from springs at Bertiestown and Gibbstown. Ample and good	None	4	35	,,	,,	,,
Stapleton, 299	Wells and pumps Dip well at Barracks liable to contamination from surface water	None	3	67	,,	,,	,,
Trough, 85	Wells (principally). 1 house insufficient. Some doubtful quality	None	—	18	,,	,,	,,
Westlinton, 382	Ample from Temper Kern Springs. Connections not yet made	None	5	86	,,	,,	,,
PENRITH RURAL DISTRICT.							
Ainstable, 363	Gravitation from Harras Springs. Sufficient & good quality	East end of village sewered. Irrigation. Extension of sewer needed for N.E. portion	5	74	Occupiers	Occupiers	Yes
Berrier & Murrah 81	West Division scheme. Bullfell Springs. Sufficient except in very dry weather. Good quality	None	—	all	,,	,,	,,

PENRITH RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Bowscale, 20	Spring on Fell piped to covered well. Sufficient & good	None	—	all	Occupiers	Occupiers	Yes
Castle Sowerby, 690	Springs, wells, and open runners. Insufficient & liable to contamination	None	—	—	,,	,,	,,
Catterlen, 98	West Division scheme. Sufficient and good	None	1	18	,,	,,	?
Croglin, 233	Spring. Sufficient. Good. Hard water	Croglin Village. Irrigation	5	48	,,	,,	?
Culgaith, 313	Gravitation scheme from above Kirkland. Good and sufficient	Culgaith Village. Irrigation. Land being extended	15	56	,,	? Dump	?
Dacre, 863	West Division scheme to Newbiggin, Stainton, and Redhills. Dacre from spring above village. Sufficient & good	Stainton Village. Sewered. Irrigation	22	189	,,	,,	?
Edenhall, 240	Spring. Pumped by ram to reservoir. Sufficient & good	Edenhall Village	10	40	,,	,,	?
Gamblesby, 189	Spring piped to village. Sufficient. Good	New scheme in course of construction. Septic tank and filter bed	2	51	,,	,,	?

Glassonby, 147	Spring. Pumped to reservoir near village. Sufficient. Good	Glassonby Village. Irrigation	6	28	,,	,,	?
Great Salkeld, 394	Spring. Gravitation. Sufficient. Good	Village. Septic tank and irrigation	6	88	,,	,,	?
Greystoke 495	Western Division scheme. Greystoke, Johnby, Little Blencow, & Motherby supplied	Greystoke village into stream	?*	?	,,	Dump in village. Emptied by Council	?
Hesket-in-the-Forest, 1774	Clint Springs on East Fells. Supplies Armathwaite, Aiket Gate, Low and High Hesket, Southwaite, Meliguards, Calthwaite, Plumpton	Armathwaite direct to River Eden. Low Hesket septic tank and filter. Calthwaite septic tank	24	361	,,	Occupiers to dumps	?
Hunsonby and Winskill, 272	Spring. Sufficient and good	Winskill Village. Irrigation. An extension of sewer with septic tank and irrigation land now in hand	1	72	,,	,,	?
Hutton-in-the Forest, 219	Joint gravitation supply from Clint Springs & Western Division scheme. Marketgate, Thomas Close, & Hutton End, as well as some outlying houses are supplied	None	0	38	,,	None	?

* Information not available.

PENRITH RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Hutton John, 23	... Western Division scheme Sufficient and good	... None	... 0	6	... Occupiers	... None	... ?
Hutton Roof, 114	... Part from Western Division scheme and part from springs. Shortage in part supplied by springs, which are not free from risks of contamination	... None	... ?*	?	... ,,	... ,,	... ?
Hutton Soil, 319	... Western Division scheme. Sufficient and good	... Part of Penruddock only sewered. New scheme for whole village pending	... 1	75	... ,,	... Occupiers to dump	... ?
Kirkland and Blencarn, 116	... Some houses in Kirkland have the Culgaith supply. Blencarn has a supply from Blencarn Beck. Liable to contamination	.. Blencarn, to the Beck	... 0	29	... ,,	... ,,	... ?
Kirkoswald, 475	... Two supplies to village—(1) Lower part gravitation; (2) Higher part from Lazonby main. Sufficient & good	... Kirkoswald to River Raven. Not altogether satisfactory	... 46	38	... ,,	... By Parochial Council	... Yes

Langwathby, 272	Gravitation supply from spring. Sufficient & good	Village. Irrigation. An improvement to the disposal is being considered	26	47	Occupiers	Occupier to dump	?
Lazonby, 707	Gravitation from Wady Gill Springs. Sufficient & good	Village. Irrigation. Sewer lately extended	69	64	"	"	Yes
Little Salkeld, 87	Hydraulic ram from stream. Sufficient and good	Village. Irrigation.	3	16	"	"	?
Matterdale, 245	Springs and river. Sufficient. River (lower part) liable to contamination	None	?	?	"	"	?
Melmerby, 219	Gravitation from Melmerby Fell. Sufficient & good	None	—	50	"	"	?
Middlesceugh & Braithwaite, 149	Wells and open runners. Insufficient. Liable to contamination	None	—	32	"	"	?
Mosedale, 44	Most of supply from springs satisfactory. Some from wells which are suspicious	None	?	?	"	"	?
Mungrisdale, 137	Part from West Division scheme. Good. Rest from springs or stream. Stream liable to pollution	None	—	33	"	"	?
Newton Reigny, 165	West Division scheme to village. Sufficient & good	Village. Septic tank and irrigation	6	31	"	"	?
Ousby, 230	Gravitation supply to most houses. Sufficient & good	None	1	51	"	"	?

* Information not available.

PENRITH RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Plumpton Wall, 305	Gravitation from Hesket main. Sufficient & good	None	2	50	Occupiers	Occupier to dump	?
Renwick. 174	Gravitation from Springs. Sufficent and good	Village. Effluent into disused quarry	6	36	,,	,,	?
Skelton, 591	West Division scheme. All villages supplied and several extensions to individual houses	Skelton Village. Septic tank	—	132	,,	,,	?
Skirwith. 238	Gravitation from two springs on Fell. Sufficient & good	None	—	56	,,	,,	?
Staffield, 226	Piped from spring, but only 6 houses supplied. Sufficient and good	None	2	30	,,	,,	?
Threlkeld, 559	Gravitation from spring on Blease Fell. Sufficient and good	Village. Sewers extended in 1923. Settling tank and irrigation	?*	?	,,	Occupiers to tip	?
Watermillock, 465	Springs and private gravitation schemes. Sufficient and good	None	?	?	,,	Occupiers	?

WHITEHAVEN RURAL DISTRICT.

Beckermet St. Bridget, 718	Springs near Gosforth. Ample & good	Village of Beckermet. Purification works and filter	18	151	Occupiers	Occupiers Ashes, &c., often thrown into stream	No
Beckermet St. John, 893	Springs near Gosforth. Ample & good	Villages of Beckermet & Thornhill—Purification works and filter. Scurgill and Cringlethwaite—Tanks & irrigation	138	56	,,	Part by contract. Part by occupier	Yes No
Distington, 2093	Owsen Fell. Lamplugh from springs. Ample and good	Distington Village—Two outfall sewers. Small grit chamber and settling tanks. Irrigation. Satisfactory effluent to stream. 90 houses at Pica—Purification works & filter. Satisfactory	257	148	Part by contract. Part by occupier	Contract (3 days a week)	Yes
Ennerdale and Kinniside, 415	Ennerdale Lake. Whitehaven Borough supply. Ample and good	None. A few houses drained to land	1	83	Occupiers	Occupiers	,,
Gosforth, 922	Springs near Gosforth. Ample & good	Most houses drained into roadside water drains discharging into watercourses. Unsatisfactory. A scheme was prepared, but cost prohibitive. Scheme for Gosforth Gate under consideration	6	203	,,	,,	,,

* Information not available.

WHITEHAVEN RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Haile, 291	Springs near Gosforth. Ample & good	A portion in village of Beckermet. Houses drained separately on to land	2	57	Occupiers	Occupiers	Yes
Hensingham, 2312	Ennerdale Lake. Whitehaven Borough	Village. Small tanks & irrigation. Two outfalls. Fairly satisfactory. Improvement contemplated. Keekle, Pardshaw & Goosebuts—Tank & irrigation. Outfall near Keekle Bridge. too near houses. New works on new site desirable	453	41	Occupier in isolated houses	Contract	,,
Lamplugh, 1033	Winder & Kirkland from Cogra by agreement with Arlecdon & Frizington U.D.C. Crossgates from Owsen Fell. Ample and good	Winder—Purification works and filter. Kirkland—Tank & irrigation. Satisfactory	51	167	Occupiers in isolated parts	,,	,,
Lowside Quarter, 624	Springs near Gosforth. Ample & good	Village of Thornhill purification works and filter. Rest of houses separately drained to land	12	106	Occupiers	Contract (part) Occupiers (part)	,,

Moresby, 1102	Scilly Bank—Ennerdale Lake. Moresby Parks—Supplied by Coal Co. Howgate—Springs. Sufficiency of the two former doubtful	Howgate—Purification works, filter, and irrigation. Moresby Parks—Temporary tank & irrigation	53	155	Part occupiers Part contract	Contract	,,
Nether Wasdale, 140	Springs. Ample & good. No danger of contamination	None. Houses drained separately to land	6	23	Occupier	Occupier	,,
Parton, 1552	Ennerdale Lake. Ample and good	Village sewered to sea	307	0	None	Contract	,,
Ponsonby 155	Springs near Gosforth. Ample & good	None. Houses drained separately to land	2	25	Occupiers	Occupiers	,,
Preston Quarter, 228	Ennerdale Lake. Ample and good	None. Houses drained separately to land	2	40	,,	,,	?*
Rottington, 61	Purchased in bulk from Cleator Moor U.D.C. Ample and good	None. Houses drained separately to land	0	13	,,	,,	Yes
St. Bees, 1609	Purchased in bulk from Cleator Moor U.D.C. Ample and good	The entire village, outfall into sea	262	45	Contract and occupier	Contract	,,
Salter & Eskett, 166	Supplied by Egremont U.D.C. Ample and good	In Salter 23 houses to small intercepting tank. Not entirely satisfactory. Alteration contemplated	24	9	Occupier	Occupier	,,
Sandwith, 366	Ennerdale Lake. Ample and good	None. Most of drains in existence discharge into stream	1	72	,,	,,	,,
Weddicar, 55	No public supply. Supply from springs. Ample and good	None. Houses drained to land	0	7	,,	,,	,,

* Information not available.

WIGTON RURAL DISTRICT.

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Aikton, 641	Wells. Doubtful quality. Not a pronounced scarcity. Danger of contamination	12 houses sewered near Aikton House. Irrigation. Gamelsby—Part sewered to tank & land	0	115	None	None	—
Allhallows, 930	Aspatria & Silloth Water Board. Good and ample	Fletchertown—Hydraulic tank system with filtration. Baggrow—Septic tank with effluent to stream	110	90	Contract	Contract	Yes
Allonby, 660	Aspatria & Silloth Water Board Good and ample	Sewered to sea	145	5	None	None	—
Blencogo, 143	Wells. Insufficient and of doubtful quality. Liable to contamination	Most of village sewered. Irrigation	0	25	,,	,,	—
Blennerhasset and Kirkland, 424	Aspatria & Silloth Water Board	Village sewered to river. No purification	1	60	,,	Voluntary scheme	Fairly
Boltons 868	Aspatria & Silloth Water Board	Bolton-Low-Houses & Brough Hill to land. No purification	6	139	,,	,,	Yes
Bowness, 1107	Carlisle City mains. Scheme just completed	Bowness, Port Carlisle, Glasson, Drumburgh to sea. Sewers badly laid at Glasson and Drumburgh	7	200	,,	None	No

Bromfield, 392	... Wells. Quality varied. Danger of contamination	... Bromfield and Langrigg villages to land. No purification ...	1	67 ...	,,	... ,,	... ,,
Caldbeck, 775	... Wath Brow Springs & Sandbed Mines, Hesket, supply Caldbeck Village and Hesket-new-Market. Good supply and ample. Haltcliffe—Wells very unsatisfactory	... Caldbeck Village, Upton, & Hesket to river ...	1	170 ...	,,	... ,,	... ,,
Dundraw, 224	... Wells. Varied in quantity. Doubtful quality. Danger of contamination	... Drains to land ...	0	45 ...	,,	... ,,	... ,,
Hayton & Mealo, 346	... Aspatria & Silloth Water Board	... Half of village to a tank. Effluent to stream. Prospect to Cockermouth R.D. scheme ...	22	40 ...	,,	... ,,	... ,,
High Ireby, 111	... Gravitation supply. Ample and good	... Slop drains only ...	2	20 ...	,,	... ,,	... ,,
Kirkbampton, 387	... From Carlisle City mains (just completed)	... Kirkbampton & Little Bampton villages & the "Flatt" to land ...	0	80 ...	,,	... ,,	... ,,
Kirkbride, 408	... Carlisle City mains (just completed)	... Part of E. & S. end into Monks Dyke. Unsatisfactory ...	2	80 ...	,,	... ,,	... ,,
Langrigg and Mealrigg, 239	... Wells. Doubtful in quantity & quality. Danger of contamination	... Langrigg Village to land ...	0	45 ...	,,	... ,,	... ,,

WIGTON RURAL DISTRICT (Continued).

PARISH AND POPULATION.	WATER SUPPLY.	SEWERAGE.	EXCREMENT DISPOSAL.			REFUSE DISPOSAL.	
			NUMBER OF W.C'S.	NUMBER OF PRIVIES, ETC.	ARRANGEMENTS FOR EMPTYING, ETC.	HOW IS SCAVENGING DONE?	IS IT SATISFACTORY?
Low Ireby 258	Gravitation supply. Sufficient and of good quality	Ireby Village to river with purification	1	55	"	"	"
Oulton, 307	Wells. Many dry in summer. In quality most doubtful, many bad. Most, if not all, liable to contamination. Gravitation scheme contemplated	E. end of village. W. end to open gutter. Unsatisfactory	0	60	"	"	"
Sebergham, 405	Wells. Sufficiency doubtful, as is the quality. Liable to contamination	Brow Top & Welton to land without purification	0	80	"	"	"
Thursby, 495	Wells. Of doubtful quality. Danger of contamination	Part of village to land and stream. Unsatisfactory	2	90	"	"	"
Torpenhow and Whitrigg, 281	Gravitation supply. Good and ample	Torpenhow Village to land. Unsatisfactory	0	50	"	"	"
Uldale, 228	Gravitation supply. Good and ample	None	0	30	"	"	"
Waverton, 441	Wells. Sufficiency and quality doubtful. Danger of contamination	None. Open ditches	3	80	"	"	"
Westnewton 323	Aspatria & Silloth Water Board	Slop water into stream	0	50	"	"	"

Westward, 897	... Wells and springs, except 8 houses at Red Dial from Wigton U.D.C. mains. Wells of doubtful quality, and in some cases danger of contamination	... None	... 3	80 ...	,	...	,	... ,,
Woodside, 341	... Part from Wigton U.D.C. mains. Part wells of doubtful quality. Danger of contamination. Scheme contemplated	... A few larger houses	... 4	70 ...	,,	..	..	... ,,

Appendix B.

Ministry of Health Enquiries and Loans Sanctioned for Public Health Purposes during the Years 1921 to 1925.

URBAN DISTRICTS.

	£
Arlecdon and Frizington.	
No Enquiry. Loan. Housing	11841
Aspatria.	
One Enquiry. Housing	390
Cleator Moor.	
No information furnished.	
**Cockermouth.*	
Two Enquiries. (a) Purchase of Refuse Tip.	300
(b) Relaying sewers and New Sewage Disposal Works	19876
**Egremont.*	
One Enquiry. Sewage Disposal	17600
**Harrington.*	
One Enquiry. Water Supply (in conjunction with Whitehaven Rural)	22000
Housing (without Enquiry)	23000
Holme Cultram.	
Two Enquiries. (a) Public Conveniences ...	1000
(b) Sewage Disposal ...	8000
Keswick.	
Two Enquiries. (a) Public Conveniences ...	1600
(b) Water Supply...	(in abeyance)
Maryport.	
One Enquiry. Water Supply	4900
Millom.	
One Enquiry. Water Supply...	11380
**Penrith.*	
Two Enquiries. (a) Public Conveniences ...	1600
(b) Water Supply... ...	26564
Housing	52200
Whitehaven.	
One Enquiry. House Refuse Disposal ...	3598
Wigton.	
Two Enquiries. Sewage Disposal	23000

**Workington.*			
	No Public Enquiries.	Housing	42345
		Water	1190

RURAL DISTRICTS.

**Alston.*			
	No Enquiry.	Housing	1500
Bootle.			
	No Enquiry.		
**Brampton.*			
	Three Enquiries.	(a) Public Conveniences...	300
		(b) Water Supply ...	1025
		(c) Sewerage	2650
**Carlisle.*			
	Four Enquiries.	(a) Water Supplies ...	69259
		(b) Sewerage	422
**Cockermouth.*			
	Eight Enquiries.	(a) Sewerage	13707
		(b) Water Supplies ...	3350
Longtown.			
	Two Enquiries.	(a) Sewerage	9700
		(b) Water Supplies ...	22650
		Housing (without Enquiry)	10690
Penrith.			
	No Enquiries.		
**Whitehaven.*			
	No Enquiries within this period.		
		(a) Water Supply...	25593
		(b) Sewerage	12883
		(c) Housing	119289
**Wigton.*			
	One Enquiry.	Water Supply...	20500

* Financial aid received from the Unemployment Grants Committee.

Appendix C.

Principal Acts, Orders and Regulations, and Memoranda, 1921-25.

Housing Act, 1921.

An Act to amend the law relating to the Housing of the People and for purposes connected therewith.

Public Health (Officers) Act, 1921.

An Act to amend the law relating to the appointment and tenure of office of Medical Officers of Health, Sanitary Inspectors, and Inspectors of Nuisances, and for other purposes.

Public Health (Tuberculosis) Act, 1921.

An Act to make further provision with respect to arrangements by Local Authorities for the treatment of tuberculosis.

Water Undertakings (Modification of Charges) Act, 1921.

An Act to make provision for the modification of the charges which may be made in respect of water undertakings.

The Water Undertakings (Modification of Charges) Rules, 1921.

Circular 185. *31st March,* 1921.

Supply of milk for expectant and nursing mothers and for infants.

Regulations of Food Controller.

Licences permitting the use of the designation "Grade A (Certified) Milk" and "Grade A Milk."

Circular 197. *12th May,* 1921.

Employment of ex-Servicemen on Housing Schemes.

Circular 222. *25th July,* 1921.

Housing and Town Planning. Local Authorities Assisted Housing Schemes.

Regulations. 12th *March,* 1921.

Housing and Town Planning. Local Authorities (Assisted Housing Schemes) Amendment Regulations, 1921.

Regulations. 12th November, 1921.

Housing and Town Planning. Ministry of Health (Temporary Relaxation of Building Bye-laws).

Regulations, 1920.

Regulations. *29th March*, 1921.

Housing and Town Planning. Ministry of Health (Town Planning) Regulations, 1921.

Circular 145. *30th March*, 1921.

Town Planning.

Circular 161. *24th December*, 1920.

Fees of doctors called in by midwives.

Regulations. *28th April*, 1921.

National Health Insurance (Termination of Sanatorium Benefit) Regulations, 1921.

Circular 172. *28th January*, 1921.

Public Health. Anthrax from Shaving Brushes.

Circular 181. *23rd February*, 1921.

Encephalitis Lethargica, Cerebro-Spinal Fever, and Poliomyelitis.

Circular 217. *15th July*, 1921.

Public Health. Epidemic Diarrhœa. Precautions to be taken by Sanitary Authorities in the summer months, with special reference to the Prevention of Summer Diarrhœa.

Circular 138. *12th November*, 1921.

Public Health. Maternity and Child Welfare.

Circular 233. *30th August*, 1921.

Public Health. Officers' Salaries.

Circular 174. *17th February*, 1921.

Public Health. Payment of Grant.

Order, *12th April*, 1921.

Public Health. Sanitary Officers (Tenure of Office) Order, 1921.

Circular. *14th April*, 1921.

Tenure of Office of Medical Officer of Health and Inspector of Nuisances.

Order. *27th May*, 1921.

Ministry of Health (Factories and Workshops Transfer of Power Order), 1921.

Circular 235. *2nd October*, 1921.

Circular 231. *22nd August*, 1921.

Public Health. Tuberculous Emigrants.

Regulations. *21st April*, 1921.

Public Health (Tuberculosis) Regulation, 1921.

Circular 196. 21*st April*, 1921.

Re Public Health (Tuberculosis) Regulations, 1921.

Circular 190. 31*st March*, 1921.

Public Health. Tuberculosis Treatment.

Memorandum. 31*st March*, 1921.

Financial arrangements to be made on and after the 1st May, 1921, in regard to the schemes of local authorities for the treatment of tuberculosis in England.

Circular 246*a*. 23*rd September*, 1921.

Tuberculosis Treatment.

Circular 166. 20*th January*, 1921.

Public Health. Venereal Diseases. Prevention and Treatment.

Circular 202. 31*st May*, 1921.

Public Health. Venereal Diseases. Prevention and Treatment.

Circular 241. 15*th September*, 1921.

Public Health. Water Supplies. Chlorination.

Memorandum. January, 1921.

Sale of Food and Drugs.

Memorandum with regard to the Reports of Public Analysts under the Sale of Food and Drugs Acts, and the Reports of Medical Officers of Health under the Public Health (Milk and Cream) Regulations, 1912 and 1917.

Bread Acts Amendment Act, 1922.

An Act to amend the enactments relating to the provision of regulations for the making and sale of bread, and for preventing adulteration of meal, flour and bread. *Act.* 1922.

Local Government and Other Officers' Superannuation Act, 1922.

An Act to provide for the superannuation of persons employed by Local Authorities and other Public Bodies.

Circular 353. 8*th January*, 1923.

Local Government and Other Officers' Superannuation, Act, 1922.

Milk and Dairies (*Amendment*) *Act*, 1922.

An Act to postpone for a further period the operation of the Milk and Dairies (Consolidation) Act, 1915, and the Milk and Dairies (Scotland) Act, 1914, to make further provision with regard to the sale of milk and for purposes connected therewith.

Order. *14th August*, 1922.

Milk and Dairies (Consolidation) Act, 1915, (Commencement of Operation) Order, 1922.

Order, *9th December*, 1922.

Milk (Special Designations) Order, 1922.

Circular 356. *12th December*, 1922.

Milk and Dairies Amendment Act, 1922.

Order. *18th December*, 1922.

Milk (Special Designations) Amendment Order, 1922.

Circular 362. *19th December*, 1922.

Pasteurised Milk.

Circular 335. *28th August*, 1922.

Milk and Dairies (Amendment) Act, 1922.

Sale of Tea Act, 1922.

An Act to provide for the better protection of the public in relation to the sale of Tea.

Regulations. *1st May*, 1923.

Milk and Dairies (Amendment) Act, 1922.

Public Health (Condensed Milk) Regulations, 1923.

Memorandum. *31st March*, 1922.

Blind Persons Act, 1920.

Circular 286. *February*, 1922.

Housing and Town Planning. Appeals to the Ministry of Health. Section 28, Housing, Town Planning, &c., Act, 1919.

Regulations. *17th December*, 1921.

Housing and Town Planning. Local Authorities (Assisted Housing Schemes) Amendment (No. 2) Regulations, 1921.

Regulations. *16th September*, 1922.

Housing and Town Planning. Ministry of Health (Temporary Relaxation of Building Bye-laws) Regulations, 1922.

Order. *12th August*, 1922.

Housing and Town Planning.

Town Planning (General Interim Development) Order, 1922.

Memorandum. *August*, 1922.

Town Planning. Development during preparation of Preliminary Statement. Order under Section 45 of the Housing, Town Planning, &c., Act, 1919.

Circular 368. *29th January,* 1923.
Housing and Town Planning.

Regulations. *8th March,* 1922.
National Health Insurance (Termination of Sanatorium Benefit) Amendment Regulations, 1922.

Circular 272. *9th December,* 1921.
Public Health. Maternity and Child Welfare Arrangements for 1922-23.

Circular 267. *13th December,* 1921.
Supply of milk for expectant and nursing mothers and infants.

Memorandum. *July,* 1922.
Public Health. Maternity and Child Welfare. Training of Health Visitors.

Order. *28th March,* 1922.
Public Health. Sanitary Officers Order, 1922.

Circular 299. *29th March,* 1922.
Sanitary Officers Order.

Circular 257. *3rd November,* 1921.
Tuberculosis Treatment.

Circular 280. *17th January,* 1922.
Tuberculosis Treatment.

Circular 323. *17th July,* 1922.
Tuberculosis Treatment.

Circular 281. *10th January,* 1922.
Venereal Diseases. Diagnosis and Treatment.

Circular 270. *20th December,* 1921.
Sale of Food and Drugs Acts and Public Health (Milk and Cream) Regulations, 1912 and 1917.

Housing, &c., Act, 1923.
An Act to amend the enactments relating to the Housing of the Working Classes (including the amendment and revocation of building bye-laws), Town Planning, and the acquisition of small dwellings.

Regulations. *2nd January,* 1924.
County Councils (Assisted Schemes for the Housing of Employees) Amendment Regulations, 1924.

Circular 388*a*. *4th August,* 1923.
Housing, &c., Act, 1923.

Circular 471. *17th January,* 1924.
Housing, &c., Act, 1923.

Circular 387. *24th April*, 1923.
Welfare of the Blind. Co-operation between training and employing agencies.

Circular 403. *28th May*, 1923.
Local Government and Other Officers' Superannuation Act, 1922.

Circular 358. *20th December*, 1922.
Midwives Act, 1918. Fees of doctors called in by midwives.

Order. *25th May*, 1923.
Milk (Special Designations) Order, 1923.

Circular 408. *29th May*, 1923.
Milk (Special Designations) Order, 1923.

Circular 426. *14th August*, 1923.
Public Health. Cancer.

Memorandum. *July*, 1923.
Cancer.

Circular 350. *6th November*, 1922.
Smallpox.

Memorandum. *November*, 1922.
On the steps requisite to be taken by Sanitary Authorities on the occurrence of Smallpox.

Circular 425. *2nd August*, 1923.
Tuberculosis Notification.

Circular 381. *20th March*, 1923.
Sale of Food and Drugs.

Circular 360. *22nd December*, 1922.
Public Health (Milk and Cream) Regulations, 1912 and 1917. Reports.

Housing (*Financial Provisions*) *Act*, 1924.
An Act to amend the financial provisions of the Housing, &c., Act, 1923, and for other purposes incidental thereto or connected therewith.

Circular 520. *20th August*, 1924.
On the Housing (Financial Provisions) Act, 1924.

Circular 520*a*. *3rd February*, 1925.
Housing. Augmentation of skilled labour in building trades.

Circular 555. *30th January*, 1925.
Housing Acts. Guarantees to Building Societies.

Regulations. *5th November*, 1923.
Public Health (Dried Milk) Regulations, 1923.

Circular 452. *8th November,* 1923.
Dried Milk.

Circular 517. *30th June,* 1924.
Maternal Mortality.

Circular 465. *19th December,* 1923.
Tuberculosis. After-care of Patients.

Circular 466. *21st December,* 1923.
Tuberculosis. Co-ordination of Work.

Circular 479. *3rd March,* 1924.
Tuberculosis Treatment.

Housing Act, 1925.
An Act to consolidate the enactments relating to the Housing of the Working Classes in England and Wales.

Regulations. 1st September, 1925.
Housing Consolidated Regulations, 1925.

Order. 25th July, 1925.
Housing (Loans by County Councils) Order, 1925.

Rules. 8th July, 1925.
Housing Act (Appeal Procedure) Rules, 1925.

Order. 9th July, 1925.
Housing Act (Form of Orders and Notices) Order, 1925.

Circular 608. *20th June,* 1925.
Housing Act, 1925.

Public Health Act, 1925.
An Act to amend the Public Health Acts, 1875 to 1907, and the Baths and Washhouses Acts, 1846 to 1899, in respect of matters for which provision is commonly made in local Acts and for other purposes relating to the public health.

Town Planning Act, 1925.
An Act to consolidate the enactments relating to Town Planning in England and Wales.

Order. 13th July, 1925.
Diseases of Animals Acts.
Tuberculosis Order, 1925.

Circular 13. *15th July,* 1925.
Ministry of Agriculture and Fisheries.
Tuberculosis Order, 1925.

Order. 5th August, 1925.
Tuberculosis Order of 1925 (No. 2).

Circular 18, *August,* 1925, *and Circulars* 19 *and* 616.
Tuberculosis Order of 1925 (No. 2).

Circular 571. *12th March*, 1925.
Housing. Assistance to Owner-Occupiers.

Regulations. 5th August, 1925.
Local Authorities (Assisted Housing Schemes) Amendment Regulations, 1925.

Regulations. 9th March, 1925.
Housing. Public Utility Societies' Regulations, 1925.

Order. 28th July, 1925.
Milk and Dairies (Consolidation) Act, 1915 (Commencement of Operation) Order, 1925.

Circular 612. *31st July*, 1925.
Milk and Dairies (Consolidation) Act, 1925.

Circulars 607 *and* 607*a*. *21st July*, 1925.
Poor Law. Tuberculosis Treatment.

Regulations. 4th August, 1925.
Public Health (Preservatives, &c., in Food) Regulations, 1925.

Circular 606. *11th August*, 1925.
(Preservatives in Food) Regulations.

Circular 557. *9th February*, 1925.
Training of Health Visitors.

Memorandum. February, 1925.
Explanatory of the Grants which will be made by the Minister of Health for the Training of Health Visitors.

Circular 559. *27th February*, 1925.
Training and Supply of Midwives.

Memorandum. February, 1925.
As to the conditions upon which Grants will be made by the Minister of Health in aid of the Training of Midwives.

Regulations. 31st July, 1925.
Public Health (Prevention of Tuberculosis) Regulations, 1925.

Circular 615. *7th August*, 1925.
Prevention of Tuberculosis Regulations, 1925.

Regulations. 18th December, 1925.
Tuberculosis Regulations, 1924.

Circulars 549 *and* 549*a*. *22nd December*, 1924.
Tuberculosis Regulations, 1912 and 1921.

Circular 613. *15th September*, 1925.
Tuberculosis Treatment.

Appendix D.

CUMBERLAND COUNTY COUNCIL.

ENGLETHWAITE INDUSTRIAL COLONY.

SUMMARY REPORT

OF THE

MEDICAL SUPERINTENDENT,
MARK S. FRASER, M.D., D.P.H., F.R.C.S.,Ed.

FOR THE

WHOLE PERIOD, 1920-1925.

ENGLETHWAITE INDUSTRIAL COLONY.

PERIOD 1920-1925.

General Statement.

Before reviewing the working of the Colony during the period of 5½ years when patients were in residence at Englethwaite, it is desirable that certain facts which may have been forgotten should be briefly recalled. The Englethwaite Hall Estate was purchased by the Cumberland County Council in August, 1919, for the sum of £5,083, with a view to converting it into a Colony for the treatement and training of tuberculous men, especially ex-Service men.

The Council was one of the first, if not actually the first, in England to undertake a Colony Scheme as a charge on public funds without voluntary assistance of any kind.

Extensive alterations, including the installation of a large and modern electric light plant, the construction of extra water-storage tanks, the enlarging of the existing sewage disposal system, and many minor alterations had to be undertaken before the Hall was suitable for use as a Colony.

The first Colonists were not admitted, therefore, till April, 1920, by which time accommodation for 22 patients was available in the Hall, now known as the Hospital.

By the end of 1922, by the erection of new wooden shelters (constructed for the Colony in its own Joinery Department) and by the loan of shelters from the County Health Department, 40 beds were available for the use of Colonists proper, separate accommodation having been provided for the members of the Outdoor and Training Staff.

This number of beds remained more or less uniform till the Colony was officially closed on November 14th, 1925. That the County Council never intended Englethwaite to continue on this limited scale is a point which has frequently been forgotten; these beds were only intended to be the nucleus of the expanding scheme which alone could have justified the standing charges.

As early as in April, 1920, the Ministry of Health was approached for approval of a scheme for developing the Colony into a Village Settlement, where the married Colonists could have their wives and children residing with them.

Unfortunately for Englethwaite the period of financial stringency intervened, and the scheme never materialised. In November, 1920, a scheme for extending the number of beds from 40-100 was approved by the County Council, but was again deferred by the Ministry of Health.

In August, 1921, a modified scheme for 75 beds was approved by the Council, and again deferred.

If any one of these schemes had been allowed to develop Englethwaite would probably have been at this date a flourishing Institution for the treatment of tuberculosis.

In February, 1922, it was decided to discourage applications from other Authorities, as it was felt that Cumberland men, of whom at that time there was a fairly long waiting list, should have the preference. Undoubtedly this decision adversely affected the admissions from 1924 onwards.

Had any of the larger schemes been completed it would not have been necessary to restrict the admission from Outside Areas; other Authorities would have gladly accepted the available beds, and the cost of the maintenance of the Institution would have been shared by them, instead of falling entirely on Cumberland and the Ministry of Health as was the case during the last year or so of the Colony's existence.

Early in 1924 it became very evident that before long there would not be a sufficient number of patients forthcoming to keep the beds at the Colony fully occupied.

This was due to various causes, which were explained in detail at the time, but a brief resumé of them will be of value at this point.

1. Ex-Service men with pensions were able and, in most cases, willing to spend at least a year at the Colony, their dependants meantime being amply provided for by the Ministry of Pensions.

As time went on, however, the number of Cumberland pensioners desiring admission to the Colony inevitably decreased, because many of them had received a full period of treatment, others had become unsuitable for Colony treatment, and some had died. *It is gratifying to note that most of the ex-service men treated at Englethwaite are alive with the disease fully or partly arrested.*

2. Civilians, as a rule, were able to stay in the Colony for a short period only—from 3-6 months, because their dependants had to be supported meantime by National Health payments, contributions from Boards of Guardians, or private assistance. Consequently, no sooner had a civilian found himself in better health than he became anxious to go home and to return to work, usually at his old occupation, in which, although frequently unsuitable, a vacancy had been kept for him.

3. For similar reasons the men from Outside Areas gradually decreased in number.

It is worth noting here that Outside Authorities never sent civilians to Englethwaite, probably because the cost of maintenance of ex-Service men was borne in toto by the Ministry of Pensions.

For the above reasons, then, the number of men desiring admission to Englethwaite became smaller and smaller, but though the Colonists decreased in number the overhead charges remained the same, and consequently the cost of maintenance of each Colonist was materially increased.

The time was, therefore, bound to come when it would be entirely uneconomic to retain Englethwaite for the treatment of tuberculosis, and the County Council decided that as soon as it could conveniently be arranged the Colony should be closed. In due course, therefore, when all the Colonists in residence had received a satisfactory period of treatment, the Colony was closed, and it is gratifying to note that none of the Colonists required to be sent to other Institutions, as all were fit to go back to their own homes.

So far as the Nursing, Domestic, Outdoor and Training Staffs (15 persons) were concerned, the Medical Superintendent is glad to report that he was able to find suitable posts for them all, with the exception of two men, one of whom was at the time recovering from a severe attack of influenza and was unfit for work. (This man was sent to a Convalescent Home for ex-Service men in the South of England, and gradually became fit again.)

The question of ex-gratia compensation for loss of appointments did not, therefore, arise.

Early in the Colony's history a dry Canteen was established and a Sports Committee formed, with the understanding that all funds raised by them would always be used for the Colonists' benefit. At the closure of the Colony a considerable sum remained from these Funds, and this money was expended on warm shirts, cardigans, etc. On the 12th November, 1925, each Colonist received a gift, and small presents were also given to the members of the Training and Domestic Staffs as an appreciation of their services.

Lady Mabel Howard very kindly presented the gifts, and the Colony was formally closed.

On the same day the Medical Superintendent handed over the balance of the Colony Comforts Fund in equal shares to the Cumberland After-Care of Cripples Fund and the Prince of Wales' Fund.

All valuable gifts which from time to time had been presented to the Colony were disposed of according to the wishes of their donors—for example, the electric lantern presented by Colonel Ballantine-Dykes was handed over to the County Health Department, and the gramophone presented by Mr. James Mc.Gowan was given to the Whitehaven Infirmary.

The Hospitals Sub-Committee decided that all patients' bedsteads, mattresses, blankets, sheets, etc., should be thoroughly disinfected, and that such number as might be required should be loaned to necessitous tuberculous patients in the County, and the remainder offered for sale to Blencathra Sanatorium and other similar Institutions.

They further decided that all bedding not so disposed of should be burned.

Fortunately, Blencathra Sanatorium purchased so much that only a few old mattresses were ultimately destroyed.

Every precaution was, therefore, taken that no infected articles were at any time offered for sale to the public.

On account of the closing of Englethwaite two questions have frequently been asked, viz. :— *Was Englethwaite an expensive experiment? Was Engththwaite a failure?*

Some hold the opinion that it was both, but in spite of the fact that it was found necessary to close Englethwaite, because of the handicaps under which it laboured and for the reasons already stated, certain facts given later in this Report will demonstrate that *the Colony did not prove a serious charge on the County Funds, and that it did much valuable work among the men who were Colonists.*

These facts will be found under the headings " Finance " and " Summary of Results."

Under " Finance," capital charges have not been taken into account, because although a considerable sum of money has already been obtained from the sale of furniture and other plenishings, the accounts cannot be closed because the Hospital and Estate have yet to be sold. The actual sum which will be realised by the sale of property is, therefore, at present unknown.

SUMMARY OF RESULTS.

Period 1920-1925.

An analysis of the results and facts obtained will be given under the following headings :—

1.—Medical.
2.—Industries.
3.—Finance.
4.—General Findings

1.—MEDICAL.

In all, 191 men received treatment and training at Englethwaite during the 5½ years when patients were in residence. Of these, 160 men received one continuous period of treatment, 28 men received two separate periods, and 3 men received three separate periods.

It frequently happened that a man was obliged to go home for family reasons, and returned to complete his treatment as soon as he had overcome his home difficulties, which were usually financial. Several men were admitted to the Cumberland Infirmary to undergo operations, and later returned to the Colony.

Some men who had been discharged after treatment, and who had been at work for months or even years, were re-admitted after a partial breakdown in health in order to build them up again.

The following table shows to what category these men belonged, and also their average period of treatment:—

TABLE I.

No.	Class.	No. of weeks.
58	Cumberland Ex-Service men	52
96	Cumberland civilians	37
37	Men from Other Areas	42

From the above table it will be observed that Cumberland ex-Service men had an average stay of 1 year, Cumberland civilians an average stay of 37 weeks, and men from Outside Areas an average stay of 42 weeks.

Information regarding the occupation or trade followed by each man before his admission to the Colony is of general interest, and is given below:—

TABLE II.

Occupation.	No.
General Labourers	32
Metal and Stoneworkers, and Stokers	27
Coalminers	26
Iron-ore Miners	25
Shop Assistants	24
Mechanics and Motor Drivers	17
Farmworkers and Gardeners	14
Clerks and Travellers	12
Other Occupations	8
No Occupation	6
Total ...	191

As might be expected in Cumberland, coal-miners, iron-ore miners, general labourers, and metal and stone workers were found to be more numerous than other classes of men.

This does not necessarily mean that these occupations are less healthy than others. There is no doubt that unemployment, overcrowding, and bad housing in the West of Cumberland, where most of these men came from, is one of the chief contributory causes. It is well-known that many of the men developed active tuberculosis during, or shortly after, the Great War, and many people will probably think the War entirely responsible, but this is not true without qualification. Constant investigation into the past histories of the ex-Service colonists demonstrated the probability that many of the men had had the germs of tuberculosis lying latent within them, and that the strain of war service, by lowering the vitality and the resisting power of the body, allowed the Tuberculosis to develop into an active form.

The War was certainly the aggravating cause, but it is improbable that direct infection took place in the Army on a large scale; in the Navy it probably took place more frequently, and was there of a more virulent type.

It is now well-known to medical men that the germs of Tuberculosis gain admission to the bronchial glands in childhood—very often before school age. In the majority of cases the glands become calcified and the germs destroyed; in others, the germs remain latent, or they may become active in early or middle adult life when, for some reason, the vitality of the body has been lowered. The following Table, which shows the ages of the men admitted to the Colony, bears out this statement. The admissions between the ages of 21 and 35 form almost two-thirds of the total admissions.

TABLE III.

Ages on Admission.	Number.	Improved	Unchanged.	Worse.	In other Institutions.	Dead.	Untraced.
15 to 20	21	8	3	3	1	6	—
21 to 25	41	13	14	3	2	6	3
26 to 30	41	10	13	7	2	5	4
31 to 35	43	8	12	10	1	8	4
36 to 40	16	1	6	5	3	1	—
41 to 45	17	2	7	1	2	4	1
46 to 50	6	1	1	1	—	1	2
51 to 55	4	1	2	—	—	1	—
56 to 60	2	1	—	1	—	—	—
Totals	191	45	58	31	11	32	14

Table III. also shows that the present condition of the men in the various age groups compared to their condition previous to admission to the Colony has been analysed.

It will be seen that 45 men continue to hold the improved state of health which they gained at the Colony, and that in 58 other cases the condition remains unchanged, which practically means that the active spread of disease has been arrested. From Table III. it would also appear that the resisting powers of the body to Tuberculosis are:—

At the age of	(1)	15-20 years	weak
,,	(2)	21-25 years	strong
,,	(3)	26-30 years	strong
,,	(4)	31-35 years	not so strong
,,	(5)	36-40 years	stronger than (4)
,,	(6)	40 onwards	strong

Early in 1926 an exhaustive enquiry was made into the present position of ex-Colonists, and the results of the enquiry are shown in Tables IV. and V. In all but 14 cases it was possible to obtain definite information as to their capacity for work and general fitness by medical examination and otherwise, a detailed report being very kindly given by the Tuberculosis Officers under whose care the men now are.

From Table IV. it may be seen that 45 early, 101 intermediate, and 42 advanced cases of Pulmonary Tuberculosis and 3 Non-pulmonary received treatment. It may also be seen from this Table in what year the various classes of cases were discharged. For information regarding their present state of health a close study of the Table cannot fail to reveal many interesting facts, e.g., of the 45 early cases admitted, 32 show the disease fully or partly arrested; of the 101 intermediate cases 64 show the disease similarly arrested. In Table V. a more complete analysis has been carried out, with special reference to the men's capacity for work.

The Table shows that 41 men are working and earning a living and that 4 are doing light or occasional work. The majority of the men now working have been in constant employment since they left Englethwaite, and a reference to the date of their discharge will show that many men have been working continuously for 2, 3, 4 or 5 years.

The Table further shows that 14 men are fit for work and 41 for light work, but all are unemployed. Had trade been good and work plentiful many of these men would have been at work, but during the present severe trade depression, when it is difficult for many a healthy man to obtain work, it is much more so for a man who is unfit for full work.

In practically every instance the men who are at present working were found employment by the Medical Superintendent, either by personal letters to or interviews with employers, or by testimonials.

Thanks are due to the County Surveyor for employing a number of ex-Colonists on road-making and repairing.

In parenthesis it may be stated that the grading of the men in the above Tables was not done by any one person, but by at least 15 independent Tuberculosis Officers. In calculating percentages, the 14 untraced cases have been subtracted from the total number, leaving the figure 177.

TABLE IV.

	Cases treated and discharged during 1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26	Total.	Present state of health as compared with condition when admitted. Improved.	Unchanged.	Worse.	In other Institutions.	Dead.	Untraced.
PULMONARY.													
Early	3	5	9	9	6	13	45	17	15	5	1	4	3
Intermediate	8	15	24	18	15	21	101	27	37	17	8	3	9
Advanced	—	5	6	8	13	10	42	1	6	9	2	22	2
NON-PULMONARY.													
Glandular-Peritoneum, etc.	—	—	—	—	1	—	1	—	—	—	—	1	—
Bones and Joints	—	—	2	—	—	—	2	—	—	—	—	2	—
Totals	11	25	41	35	35	44	191	45	58	31	11	32	14

TABLE V.

	Number Discharged.	Working & earning a living.	Doing light or occasional work.	Fit for work but Unemployed	Fit for light work but unemployed.	Unfit for work condition Stationary.	Condition more Advanced.	In other Institutions.	Dead.	Untraced.
1920-1921	11	3	—	—	2	1	1	—	2	2
1921-1922	25	3	2	—	5	2	3	1	4	5
1922-1923	41	11	2	4	7	2	2	5	7	1
1923-1924	35	13	—	1	3	2	6	2	5	3
1924-1925	35	4	—	3	8	6	2	1	11	—
1925-1926	44	7	—	6	16	4	3	2	3	3
Totals	191	41	4	14	41	17	17	11	32	14

It is unnecessary to work out percentages for all the groups in the Tables, but the percentage of (1) men working and earning a living, and of (2) men who have died, are valuable for the purposes of this enquiry. The respective percentages are 20 per cent. and 18 per cent. Shortly after the Colony was opened it was stated on very high authority that if 20 per cent. of the patients could be so improved in health as to earn their living the result might be considered most satisfactory. It was explained, in fact, that that percentage was practically the maximum that could be obtained anywhere outside a village settlement.

The percentage of fatal cases (18 per cent.) on the total admissions compares favourably with the percentage of fatal cases (44 per cent.) among the 340 cases admitted to Sanatoria from the County during the same period (1921-25). The class of case sent to the Sanatoria was practically the same as that sent to Englethwaite, for it included all cases of adult females. It was impossible to get full reports on the cases treated in Sanatoria with regard to their capacity for work, etc., because the work entailed in compiling the reports could not be undertaken without interfering with the routine work of all the Assistant County Tuberculosis Officers to an impossible degree.

The fact that the percentage of fatal cases among those who received Sanatorium treatment only is two and a half times as great as it is among those who received Colony treatment suggests, especially when it is remembered that the figures are based on some hundreds of cases and over a period of 5 years, that the results of Colony treatment are better and more lasting than those obtained from treatment in Sanatoria alone. If the analysis of the results of the Englethwaite cases has demonstrated this one point alone, the institution would seem to have been justified.

It will be of interest to learn from the following Table how the 45 men who are earning a living or doing light work are employed.

A Tuberculosis Officer reported on one of these men as follows:—" No signs now. Very fit and playing Rugby football every week."

TABLE VI.

Occupation.	*Number Employed.*
Gardening	6
As Motor Mechanics	5
,, Shop Assistants	5
,, Coal-miners	4
,, Pit-top Labourers	4
,, Labourers (various)	4
,, Farm Workers	3
Book-keeping	2
Poultry-keeping	2
As Colony Staff Men	2
Joinering	2
As Quarrymen	2
At Other Occupations	4
Total number	45

2.—INDUSTRIES.

After 5½ years of experience in supervising the Industries at Englethwaite Colony, one is still firmly of the opinion that—(1) Industries are extremely valuable in the treatment of early Pulmonary Tuberculosis in adults; (2) such Industries can only under exceptional circumstances be self-supporting; (3) Industries are more valuable as part of the treatment than as preparation for the following of new occupations. Let us consider these facts under their headings.

1. *Why are Industries Valuable?*

It has been proved that graduated work in connection with the treatment of Pulmonary Tuberculosis is essential. Good food, open-air treatment and graduated work all play a part in the re-building of a man's strength, but of the three graduated work is not the least important. If a tuberculous patient works within the limits of his capacity it keeps him cheerful and hopeful, gives him a good appetite, and develops his muscles.

As has been pointed out in former Reports, it is muscle, not fat, that it is desirable to acquire, and muscle can only be developed by exercise, which at Englethwaite was provided through the Industries. Until a tuberculous working-man has largely regained his muscular strength he has very little chance of earning his own living.

2. *Can Industries be Self-supporting?*

They can, but only under certain conditions.

(a) The Industries must be on a large scale and must be equipped with the most up-to-date and labour-saving machinery, and, further, a ready market for the goods produced must be available.

(b) The Industries must form part of a village settlement where by co-operative methods the failure of one man to produce the average output is made good by another man who turns out more than was expected of him. The Industries at Englethwaite were not self-supporting for three reasons—

(1) They were on too small a scale for the number of men employed.

(2) The prices obtainable in the local market for garden and poultry produce were low, because in this agricultural district there is an ample supply to meet the demand.

(3) From an early date the Colonists were paid wages —which in the aggregate proved uneconomic, although contributing much, especially in the case of civilians, to contentment and longer periods of residence.

3. *Why are Industries more valuable as part of the treatment than as training for new occupations?*

Because it has been clearly proved that unless a man is to be retained in the Institution as a paid employee, or unless After-care Schemes can market his produce, it matters little what trade he is taught to follow for the duration of his period of treatment. If the treatment is combined with an occupation which is carried on under open-air conditions he will derive full benefit from it, and that is the main thing; for, afterwards, when his health is so far restored, the tendency in most cases is for him to return home to his old job, provided that it is a fairly healthy one.

In Table VI. a detailed statement is given of the gross Receipts and Payments for the whole period 1919-1926. The Receipts include all sums received from the various Sales of Stock and Equipment, apart from any purchases made through the original Capital Account. The Payments, apart from the sum of £349 10s. 0d. charged to

Capital for the Joiner's Shop, Clogger's Shop, Poultry Food Store, and one large Laying House, include all equipment and stock required to start the Industries.

TABLE VI.

INDUSTRIES.

RECEIPTS, 1919 to 1926.

	Actual Cash Receipts.			Produce, etc., Supplied to Hospital.			Debits to Other Departments.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Market Garden.	1687	19	7	916	19	11	92	0	2	2696	19	8
Poultry Farm...	2754	13	1	140	11	1	19	15	5	3214	19	7
Clog-making ...	121	10	8		—			—		421	10	8
Joinery	1211	15	9	742	1	3	334	15	5	2288	12	5
Artificial Dentures ...	40	0	6		—			—		40	0	6
Totals......	6115	19	7	2099	12	3	446	11	0	8662	2	10

PAYMENTS, 1919 to 1926.

	Actual Cash Payments.			Refund Outdoor Staff Board.			Debits from Other Departments.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Market Garden.	4367	11	2	370	8	7	97	12	7	4835	12	4
Poultry Farm...	5847	7	0	71	2	10	318	4	4	6236	14	2
Clog-making ...	624	17	4		—		5	17	9	630	15	1
Joinery	2472	11	8	154	14	4	22	13	4	2649	19	4
Artificial Dentures ...	21	14	1		—		2	3	0	23	17	1
Totals......	13334	1	3	596	5	9	446	11	0	14376	18	0

It must be remembered that the wages of the Training Staff were borne by the Industries themselves, and are therefore included in these payments.

Strictly speaking, these wages should have been charged to the maintenance of the Institution, for it must not be forgotten that the work provided through the Industries is considered one of the most valuable parts of Colony treatment.

At this point while the loss on the Industries is under consideration, a few facts relating to each Industry are worthy of attention.

1. *Market Garden.*

The Market Garden was started on land which for many years had been "robbed," and was, to all intents and purposes, waste ground.

Every year large quantities of manures were used to improve the quality of the soil, and when the Colony was closed the bulk of the land was in a very high state of cultivation.

The increased value of the land, which must run to a considerable sum of money, has never been set down as an asset of the Market Garden in dealing with its Trading and Profit and Loss Account. As the land became richer this Industry would, without doubt, have become almost entirely self-supporting.

It has been noticed that the men in the Market Garden have done better on leaving the Colony than those employed in any of the other Industries.

2. *Poultry Farm.*

This Industry should undoubtedly have shown much better results than it did, but during the last two years of its existence it was severely handicapped by being obliged to employ a large number of men who had to be given light work in view of their poor health, and the Poultry Farm was practically the only Industry where it was possible to find light work for them.

3. *Clog-making.*

This Industry did very well up to the end of March, 1923, while the demand for clogs in the West of Cumberland was good; but at that date the demand practically ceased, and the department was left with a large quantity of clogs and material in stock. From that time no new clogs were made, but a large amount of boot and shoe repair work was executed, which always "paid its way."

The loss on the Industry is chiefly explained by the fact that, although the stock was being disposed of as opportunity arose, in the end the remainder had to be auctioned, and realised a very small sum.

4. *Joinery.*

The loss on this Industry was due principally to the fact that there was no machinery available, and all the articles turned out were made entirely by hand and therefore could not compete with the cheaper machine-made goods in the open market.

Nevertheless, the Health and Education Committees furnished this Department with a large number of suitable orders (e.g., for shelters, cupboards, tables, library boxes, etc.), and in many instances these orders were obtained by tender.

Many large poultry-houses, summer-houses, and shelters were at various times supplied to private customers.

It is gratifying to record that the workmanship in this Department was always of a consistently high standard.

3.—FINANCE.

In Tables VII. and VIII. the actual Cash Receipts and Payments for the maintenance of the Colony from 1919-1926 are given in detail.

The total Payments for the whole period amount to £36,172 5s. 5d., and the total Receipts amount to £20,330 13s. 6d.

Table VII.

ENGLETHWAITE INDUSTRIAL COLONY.

Actual Cash Receipts, 1919 to 1926.

	1919-20. £ s. d.	1920-21. £ s. d.	1921-22. £ s. d.	1922-23. £ s. d.	1923-24. £ s. d.	1924-25. £ s. d.	1925-26. £ s. d.	Total. £ s. d.
Grants from Red Cross Society..	400 0 0 ...	...	...	...	...	...	...	400 0 0
Cumberland Insurance Com. for D. S. & S...	...	721 8 1 ...	701 12 0 ...	...	...	...	...	1423 0 1
Ministry of Health, D. S. & S. ...	...	...	1351 7 4 ...	2522 11 6 ...	1200 0 0 ...	1450 0 0 ...	950 0 0 ...	7473 18 10
Maintenance of Patients from Outside Areas.	...	45 6 5 ...	904 10 6 ...	1482 18 11 ...	1167 13 9 ...	555 8 5 ...	78 6 1 ...	4234 4 1
Cumberland Ins. Com. Special Grant	...	500 0 0 ...	...	...	...	...	...	500 0 0
Other Receipts...	...	3 10 1 ...	8 0 9 ...	16 15 7 ...	47 15 10 ...	44 19 10 ...	62 2 7) ... 0 6 3) ...	183 4 8) 0 6 3)
Industries.								
Market Garden	13 0 0 ...	57 12 11 ...	331 1 1 ...	297 8 8 ...	264 5 6 ...	358 10 7 ...	366 0 10 ...	1687 19 7
Poultry Farm.	...	119 0 3 ...	443 7 6 ...	472 8 5 ...	471 9 9 ...	535 4 3 ...	713 2 11 ...	2754 13 1
Clog-making ..	...	20 10 3 ...	193 11 7 ...	83 13 11 ...	28 5 2 ...	66 17 8 ...	28 12 1 ...	421 10 8
Joinery Dept...	...	...	38 4 11 ...	335 15 2 ...	369 13 8 ...	314 0 0 ...	154 2 0 ...	1211 15 9
Artificial Dentures ...	...	...	23 12 0 ...	11 18 6 ...	4 10 0 ...	...	...	40 0 6
Total...	413 0 0 ...	1467 8 0 ...	3995 7 8 ...	5223 10 8 ...	3553 13 8 ...	3325 0 9 ...	2352 12 9 ...	20330 13 6

TABLE VIII.

ENGLETHWAITE INDUSTRIAL COLONY.

ACTUAL CASH PAYMENTS, 1919 to 1926.

Maintenance.	1919-20. £ s. d.	1920-21. £ s. d.	1921-22. £ s. d.	1922-23. £ s. d.	1923-24. £ s. d.	1924-25. £ s. d.	1925-26. £ s. d.	Total. £ s. d.
Provisions	15 0 0	651 0 6	1550 17 6	1693 12 7	1640 14 3	1677 16 5	846 9 10	8075 11 1
Fuel, Light and Cleaning (including Laundry)...	34 2 0	364 3 0	585 4 1	553 0 6	620 2 5	579 17 8	399 16 5	3136 6 1
Repairs, Buildings & Machinery ...	0 4 6	38 3 9	248 2 7	182 17 4	310 4 1	174 12 10	134 13 9	1088 18 10
Furniture, Bedding and Kitchen Appliances ...	...	18 15 9	135 14 1	110 15 3	141 1 11	100 8 4	39 13 10	546 9 2
Drugs & Appliances	...	117 18 0	39 4 1	51 12 5	44 6 8	47 6 10	8 1 5	308 9 5
Rent, Rates, Taxes & Insurance ...	35 4 0	71 17 3	74 1 6	89 2 2	107 11 3	120 3 6	72 11 9	570 11 5
Travelling Expenses of Medical Superintendent	...	...	...	25 0 0	25 0 0	25 0 0	25 0 0	100 0 0
Do. of Staff	71 19 1	98 18 3	20 8 6	39 9 10	13 12 11	8 7 0	4 2 1	256 17 8
Do. of Patients.	...	...	4 4 0	3 4 2	...	2 7 3	0 1 9	9 17 2
Printing, Advertising & Office Expenses	...	170 1 0	118 19 0	191 13 5	159 17 0	147 7 5	133 7 8	921 5 6
National Insurance	...	...	...	...	...	21 3 9	13 15 9	34 19 6
Superannuation.	...	...	...	...	...	...	36 9 3	36 9 3
Carried forward.	156 9 7	1530 17 6	2776 15 4	2940 7 8	3062 10 6	2904 11 0	1714 3 6	15085 15 1

TABLE VIII.—*Continued.*

	1919-20.	1920-21.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward.	156 9 7	1530 17 6	2776 15 4	2940 7 8	3062 10 6	2904 11 0	1714 3 6	15085 15 1
Other Payments		18 16 7	29 3 0	14 19 1	16 7 7	65 2 2	11 0 1	155 8 6
Hospital Grounds	77 10 0	113 1 8	77 4 8	64 7 2	42 9 7	66 17 2	83 6 8	524 16 11
House Porter ...			58 0 5	84 8 5	95 0 4	95 19 11	77 9 5	410 18 6
Bridge over Light Railway			69 13 6					69 13 6
Cutting Trees along Road					43 6 9			43 6 9
Loan Charges ...				456 0 0	733 2 2	729 11 8	742 10 7	2661 4 5
Salaries.								
Medical Superindent (proportion)				250 0 0	250 0 0	250 0 0	250 0 0	1000 0 0
Matron & Nurses	60 16 8	254 1 9	240 0 11	226 10 1	207 12 1	234 6 0	213 15 5	1437 2 11
Domestic Staff...		200 5 3	234 0 8	260 17 9	271 15 1	281 7 7	201 11 3	1449 17 7
Industries.								
Market Garden...	15 1 8	827 18 4	772 4 2	766 11 1	769 8 4	661 8 6	554 19 1	4367 11 2
Poultry Farm ...		1128 16 6	889 10 6	974 3 5	1145 18 6	1157 9 3	551 8 10	5847 7 0
Clog-making ...		196 1 5	276 8 10	97 12 8	8 17 8	44 11 9	1 5 0	624 17 4
Joinery		164 8 5	590 17 4	559 14 6	688 14 10	375 8 1	93 8 6	2472 11 8
Dental			16 6 3	5 7 8	0 0 2			21 14 1
Total......	309 17 11	4434 7 5	6030 5 7	6700 19 6	7335 3 7	6866 13 1	4494 18 4	36172 5 5

The sum of Payments over Receipts amounts to £15,841 11s. 11d.

As the Ministry of Health pay approximately 50 per cent. of this sum, the County Council spent on the maintenance of Englethwaite over the whole period of 5½ years the sum of £7,920 15s. 11½d. Many people have been under the impression that the County Council were spending £5,000 or £6,000 per annum on the maintenance of Englethwaite, whereas the net cost per annum was only £1,440 2s. 11d., which is little, if any, more than it would have cost the County to maintain in other Institutions those men who received treatment at the Colony.

4.—GENERAL FINDINGS.

As stated earlier in this Report, it has been proved that the results of Colony treatment are better than those of Sanatoria, chiefly because the period is longer and also because work forms one of the most important features of the treatment.

Even marked cases of Pulmonary Tuberculosis can often do a reasonable amount of work when they are receiving nourishing food and full open-air treatment.

Colony treatment, however, is not in itself sufficient. There comes a time for every man when it is imperative that he should go home to his family, and although he remains much longer in good condition than an ex-Sanatorium man does, yet he is liable to break down again in time owing to bad home conditions and lack of good food, unless he is fortunate in getting employment.

The only system of treatment that can ultimately achieve complete success is that to be found in a Village Settlement Scheme.

This, of course, entails large initial expenditure and heavy commitments, but as time goes on and the country's financial conditions improve one hopes that Village Settlements may be established in many districts throughout the kingdom.

Hundreds of thousands of pounds are at present being expended annually in Great Britain on the treatment of Pulmonary Tuberculosis, but a large proportion of this money shows no lasting result from its expenditure.

A number of counties and towns could with great profit amalgamate to establish Village Settlements, but till this is possible it would be a step in the right direction if all Sanatoria included graded work as part of their routine treatment.

No new Sanatoria nor small Colonies such as Englethwaite should be established, unless they are merely the nucleus of a big scheme, because, in the first case, the treatment usually produces only temporary benefit, and, in the second, overhead charges are in time bound to make the Colony uneconomic.

It would be ideal if Local Authorities could combine, as circumstances permit, to form Large Colonies, which could ultimately be developed into Village Settlements.